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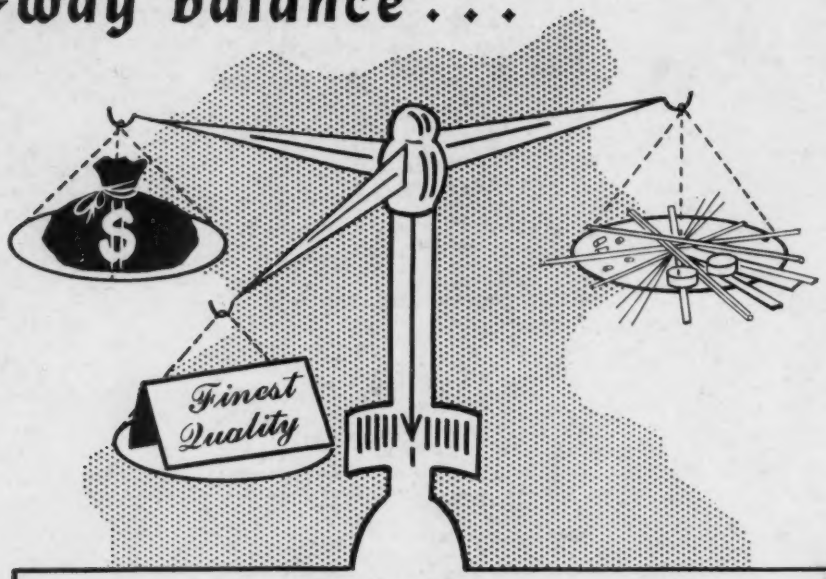

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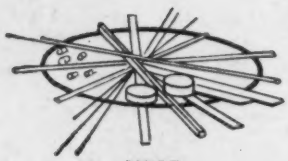

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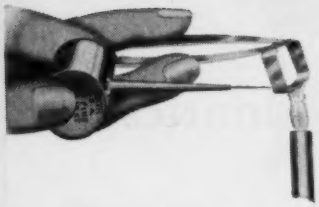

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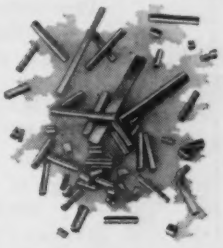

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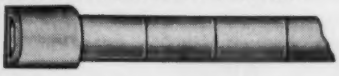

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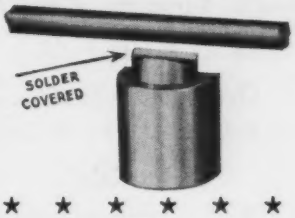

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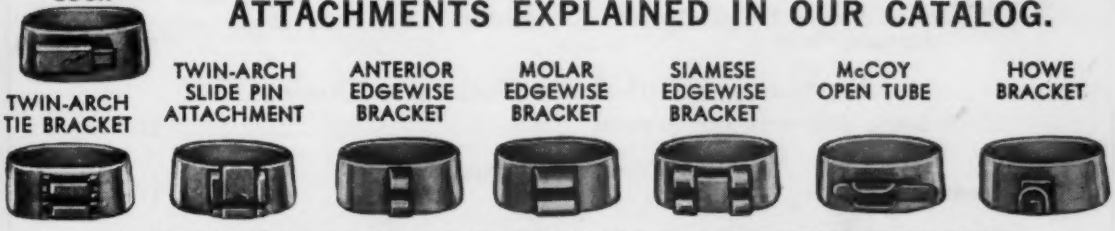

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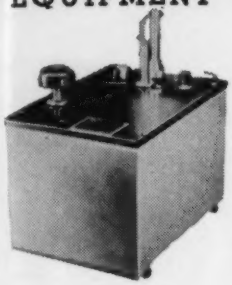

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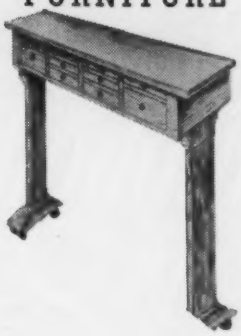

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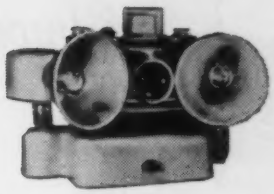

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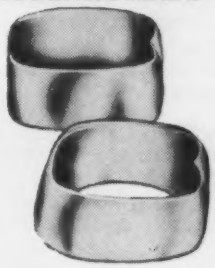

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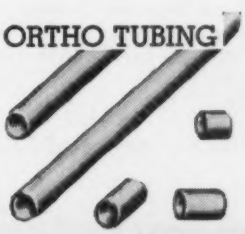

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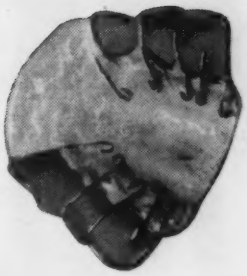

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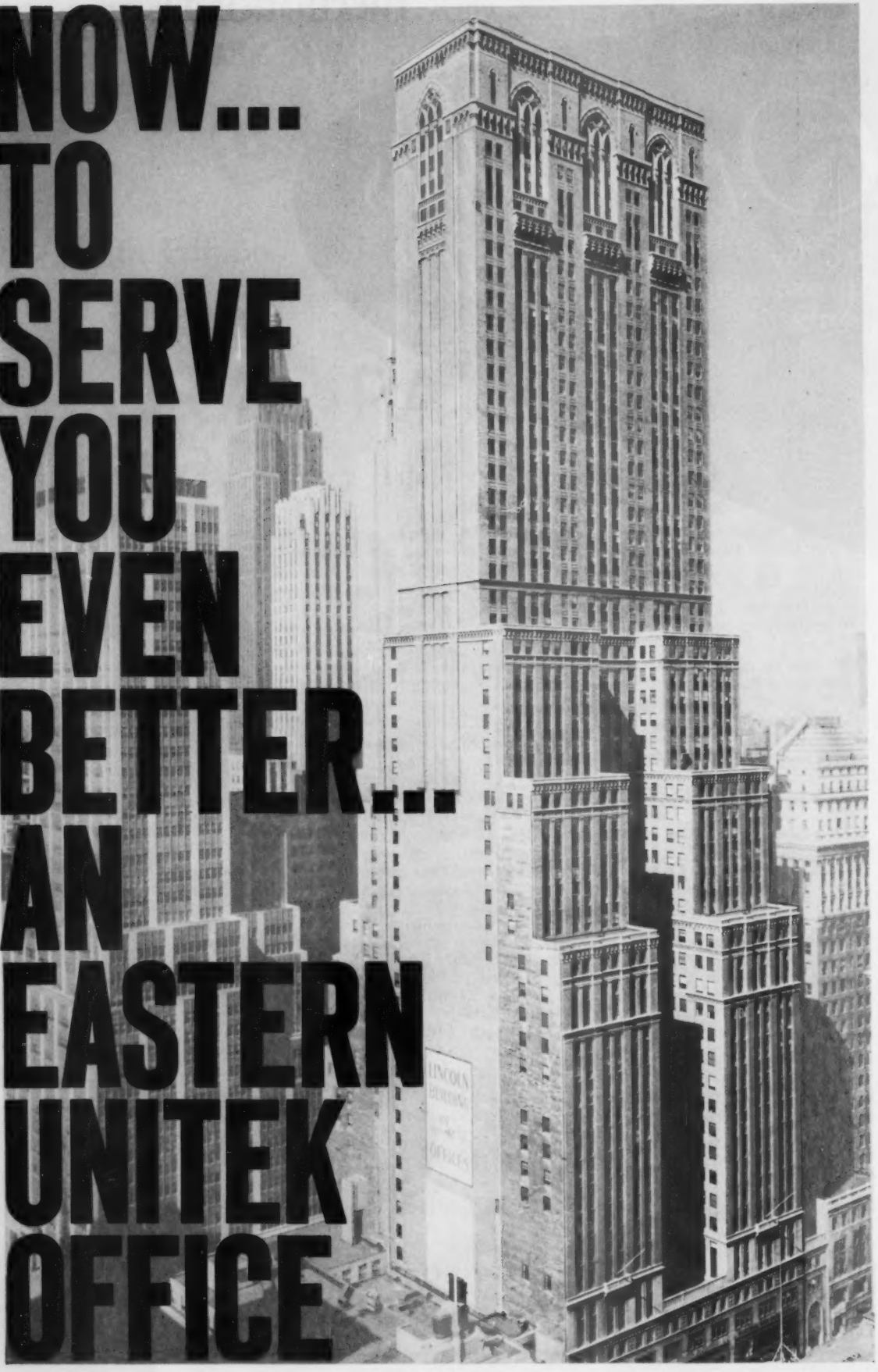

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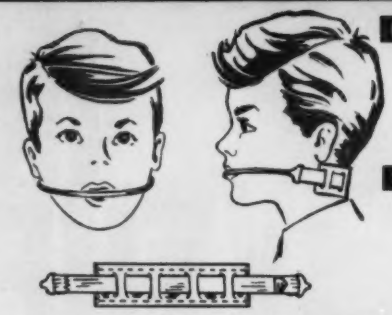

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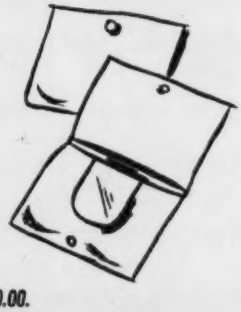

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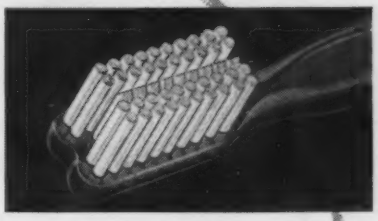

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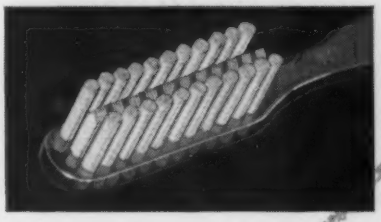

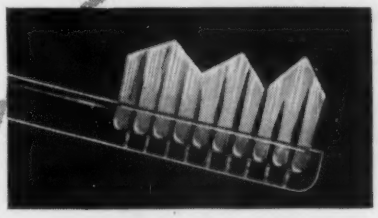

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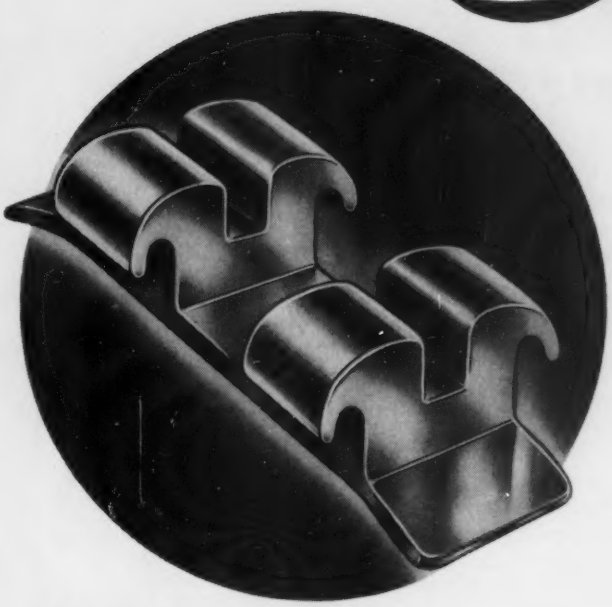

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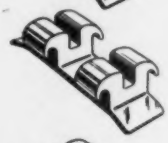

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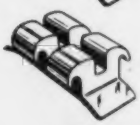

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At this workshop dentists, dental hygienists, dental assistants, dental teachers, and others interested in the subject critically presented the data, information, and opinions available regarding the entire area of practice administration and determined the best patterns for the dentist to adopt in organizing and administering his practice and for filling his niche of professional responsibility in his community.

The proper management of accounts, accurate record-keeping, cordial patient relationships, effective use of auxiliary personnel and equipment, efficient financial policies—all these and other aspects of practice administration were fully discussed at the workshop. The conclusions reached appear in "PRACTICE ADMINISTRATION FOR THE DENTIST."

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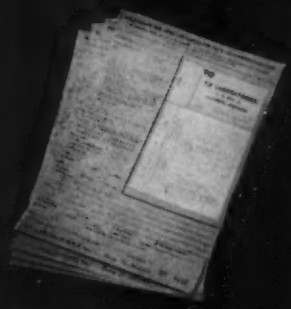

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Original Articles

PRESIDENT'S ADDRESS, GREAT LAKES SOCIETY OF ORTHODONTISTS

EDWIN G. FLINT, M.S., D.D.S., PITTSBURGH, PA.

ACCORDING to custom and the provisions of our Constitution, it is the duty of the president to deliver an annual address to the Society. For many years this address was the first item on the program, and the membership had the prerogative of arriving in time for the presidential address or after its delivery. This morning, as at the Ottawa meeting, the president has a captive audience. I shall try not to take advantage of your predicament.

Three weeks ago, because of the hotel strike in Pittsburgh, it became necessary to transfer our meeting to another city. To say that the orthodontists of the Pittsburgh district were disappointed would be an understatement. Pittsburgh's atmosphere has changed considerably since our parent organization, the American Association of Orthodontists, was incorporated there in 1917. Our city has improved its physical appearance to such an extent since we last met there in 1949 that we are now proud and happy to have visitors. These improvements are still in process and will be even more apparent when next you visit us. We are most fortunate that our members from Columbus could present the invitation and facilities that have made this meeting possible.

I have reviewed all the available published addresses of our former presidents. The wide and diversified range of subjects covered is truly remarkable. We find much profound philosophy with every subject covered, from "The

Presented at the annual meeting of the Great Lakes Society of Orthodontists, Columbus, Ohio, Nov. 3, 1958.

Philosophy of Orthodontic Treatment" to "Our Way of Life." This morning I would like to give you a more or less "State of the Union" briefing on the affairs of your Society.

In 1916, when the American Society of Orthodontists met in Pittsburgh, the total membership was 89. Within the hour, our component alone will reach an active membership of over 250. We have been adding new members at the rate of close to 20 a year. This growth has not taken place without attendant problems. I shall take this opportunity to mention a few of them.

It seems that each year, as we grow a little larger in number, it becomes more difficult to secure a representative number of table clinics for our annual meeting. This is not peculiar to our Society alone. Many similar organizations are experiencing the same difficulty. I presume that it is the "let-George-do-it" attitude which develops with the increase in numbers and the consequent diminishing of personal responsibility in a large group. To cope with this problem, I have two suggestions to make:

1. Each new member, at the meeting at which he is introduced to the Society, should be expected to present a table clinic. This would provide the members with the opportunity of meeting him, and of course we know that clinic presentation is always stimulating and beneficial to the presentor.

2. In order to preserve some of the values of the small group over the large organization, study groups might be formed in those areas where a sufficient number of men are available. The activity of such groups should produce an abundance of clinic material. During the past several years such an organization came into existence in the Pittsburgh area, with its attending benefits to those who participated in its program.

About every other year for nine years, a president has recommended that a budget committee be established so that our Society might be run a little more efficiently. This recommendation was always turned down because the Executive Board thought that such action was not yet necessary. This being an even-numbered year, I will again suggest the forming of such a committee, since we have had a request for an item to be placed in our budget. I would suggest that the treasurer of the Society be the chairman of the Budget Committee and that the secretary and the president complete this committee. The budget for the succeeding year should be presented at the Executive Committee meeting which is always held the day before our annual meetings are opened.

During this past year one serious problem which has been developing has come to a head. This is the matter of preceptorships. You may recall that for some years the requirements for membership in the Great Lakes Society were higher than those for the American Association of Orthodontists, and that we were forced to lower them to the level of the other components. Recently the American Association of Orthodontists changed its admission requirements

and, along with that change made a provision for membership through preceptorships. We will be required to have an admissions committee to pass on both the qualifications of the preceptor and the ability and the training of the applicant. Most of the component societies are already set up for this procedure.

This past summer I spent much time in correspondence with numerous members of our Society in an effort to establish such a committee. I failed in this effort, for the great majority of our membership is fundamentally opposed to the principle of preceptorships. What, then, is the solution for our particular problem? We have members from two states and Ontario in which this preceptor problem will go unnoticed, that is, in the states where state licensure is required. Over ten years ago, because of the growing belief throughout the country that some form of control was needed for special dental practice, a committee was formed by the American College of Dentists to make a survey and report on state licensure. Among the findings were included the following beliefs:

1. That the requirements of the specialist laws do not qualify one as a finished specialist any more than our regular Dental Act qualifies one as an expert dentist. Such higher standards can only be attained after years of study and experience in practice. The purpose of regulatory laws is to set adequate minimum requirements so that dentists qualifying as specialists under these requirements will be capable of rendering service with safety to the public.

2. That almost anyone to whom the purpose of the specialist's law have been explained approves the idea. The successful referendum vote on the Michigan Dental Act is a good illustration. The section on legal certification of specialists was regarded very highly by the public and was one of the most popular in winning votes.

3. That legal certification of specialists does not interfere in any way with the general practice of dentistry or its progress in general. A dentist in states requiring specialists' licensure has as much freedom of expression and action in the practice of dentistry as he had before the passage of these acts. He may practice all phases of dentistry and become expert and skillful in any branch. His regular license grants him that right.

4. That complete regulation of the practices of specialists to protect the public is possible only through certification by state statutes. Standards of qualification of schools and boards, both professional and state, serve advantageously in raising the general standards of dental education, but they have no direct effect or influence on the unprepared or misfit if he wishes to practice as a specialist in states having no regulatory laws.

5. That according to the survey there are many dentists seeking to specialize who are wholly unprepared to perform adequately the services of a specialist. Only through state regulatory laws can these dentists be prevented from representing themselves as specialists.

6. That probably not all who are legally certified, but a great many no doubt, will make plans for meeting the requirements of the national specialty boards. If a dentist should not desire certification by a national specialty board, or if by chance he should fail to meet its requirements, the public would still be protected for he would have been already certified as a specialist by his state board. Thus, both the public and the profession would be best served by the two systems of certification. Certification by state statute could very well serve as a stimulus to higher attainment and recognition and become a developing field for certification by national boards. Therefore, the quantity and the quality of services of specialists in dentistry would progressively be raised to a higher plane by which both the public and the profession would be benefited.

One of the arguments against licensing specialists through state dental boards is that it is commonly said that control through specialty boards alone has proved thoroughly satisfactory in the medical profession and that, therefore, we should follow their lead. On this point the two professions are not strictly comparable. The medical profession has a sort of police power through the specialty boards, inasmuch as many hospitals are closing their facilities to men not certified by the boards. Most medical specialists are of the opinion that control would be inadequate if it were not for the hospital angle.

In our own state there is a strange belief among many general practitioners that the passage of a specialty law would prevent them from carrying on any operations covered by the definition of a specialty unless they obtained a specialty license. Once again, these laws are not intended to curtail the activities which at the present time are permitted in the Dental Practice Act. They seek merely to prevent false representation as a specialist on the part of one who is poorly qualified or one who is not limiting his practice to such an extent that he can be seriously considered a specialist.

I would recommend that those of us who live in states unprotected by a dental specialty act work toward the passing of such legislation. This is certainly a state matter and must be treated as such.

I am happy, indeed, to have Dr. Stephen Hopkins appear on our program this afternoon to discuss "An Evaluation of Preceptorship Training as a Preparation for Specialization in Orthodontics."

Because of the peculiar nature of orthodontics, it has been pointed out that the insurance needs and protection of the orthodontist are quite different from those of the general practitioner of dentistry. For some time, different specialties in the medical field have had health and accident policies tailormade to fit their peculiar needs at a group rate which provides considerable savings and more desirable coverage. If a little thought is given to the problem, the advantages are soon apparent. For instance, in our specialty most orthodontists would suffer but little if, because of an accident or illness, they would be unable to practice for one month. A policy with a provision to start payment after thirty days of incapacitation would be approximately 30 per cent cheaper for the insurance company to issue.

This summer, after making some inquiries into this matter, I appointed an Insurance Committee consisting of David Hamilton (Chairman), Robert DeShong, and Alvin Booth to study and act on this problem if they thought it worth while. They have performed admirably. They examined all the existing policies serving the dentists in our territory and the policies of other medical specialty groups. They formulated their desires and went out to seek the best possible deal for our group. The Great Lakes Society is not of sufficient size to obtain the best group policy available; consequently, an effort will be made to present the idea to the American Association of Orthodontists at the earliest opportunity.

For some time, there has been considerable criticism, and justly so, of the manner in which new members have or have not been introduced to the Society. We were hoping to correct this problem at this meeting, but technical difficulties

arose and it seemed best to postpone our planned formal introduction for another year. Our first thought was to have the new members introduced after the Society breakfast, immediately following the business meeting which technically they are not entitled to attend. The last business session of the Society is usually so poorly attended that it, too, was ruled out. Several factors are apparent. A planned formal introduction should be included in our annual program; the new members should be informed of this and should be present for the occasion. It might be best to honor the new members at the luncheon which is held during the annual meeting.

A New York University report states that the female of the common house fly has a life expectancy 16 per cent greater than that of the male. This statement reminded me to express to you the concern of the Necrology Committee and request that you comply with their suggestions in regard to the manner in which you have provided for the disposal of your estate in case of sudden departure from our midst. This, indeed, has been a most fortunate year for our group in this respect, as only one death has been reported. This sort of luck just cannot last. A little planning might save a lot of future trouble.

This year our Society is highly honored in having one of our members, Edward Martinek, serve as president of the American Association of Orthodontists. Next spring, in Detroit, our group will serve as host to our parent organization. Consequently, funds have been allocated for this purpose. May I charge you as individuals to accept the responsibilities of a good host and to cooperate in every manner possible to make this meeting a success.

Probably the finest contribution that our Society as a group has made to orthodontics was accomplished this past year by the assistance, both in leadership and financing, provided by our membership in support of the Orthodontic Workshop held at the University of Michigan. Your group contributed $1,500.00 to this worth-while undertaking. I have heard glowing reports of the success of this venture. At this meeting, we are happy to have one of our own members, Robert Moyers, present a report on the Workshop's accomplishments.

The reports of the secretary and treasurer, which you will hear in a few minutes, will indicate that our Society is in a healthy state. Now, after a few bouquets to the deserving, I will close.

In most organizations, the secretary is the workhorse of the group. Because of the necessary transfer of our meeting, D. C. Miller had more than a double load to carry this year. With less than three weeks to go, he made arrangements and appointed the committees which made this meeting possible. Our thanks also go to his wife, Helen, who always shares his secretarial duties. We are deeply grateful for the last-minute efforts of the Columbus men who "came through" to save this year's meeting. Paul Ponitz has secured a fine group of essayists for this meeting, and George Harris performed a Herculean task in securing the table clinics. I want to thank those Pittsburgh orthodontists who were all set to give you a good meeting but were forced to transfer their jobs to other hands. I am sure that they would like to be your hosts in the not too distant future.

I hope that this meeting, as other Great Lakes meetings in the past, will renew for each of you not only your friendships but also your interest in your Society, in your profession, and in yourself and cause you to return home with renewed enthusiasm for the dedication of your life to the advancement of orthodontics.

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A NEW APPROACH TO THE TREATMENT OF MANDIBULAR PROGNATHISM

PART II

JOSEPH K. GOLD, D.M.D., AND IRA D. GILBERT, D.D.S., HOLYOKE, MASS.

INTRODUCTION

PART of the material which is being presented here appeared in the AMERICAN JOURNAL OF ORTHODONTICS in December, 1949. The present article, describing the results in thirteen cases taken from a new series of forty-five consecutive cases, provides an opportunity to discuss the subject in further detail. It is hoped that this report will throw light upon the variations found in cases classified as mandibular prognathism and once more focus attention upon the value of early treatment.

Mandibular prognathism is a broad classification which, in order to be effective, requires differentiation.[1] Attention has been focused upon the position of the mandible, but the maxillary deficiency, which in many cases is the determining factor, has been left unmentioned. Since correct therapeutic procedure depends upon a careful analysis of the total discrepancy, a study of the models, the profile photograph, and the lateral head film of each case is a necessary prerequisite to rational treatment.

Cephalometric analysis has made possible the differentiation of those cases presenting a maxilla within the normal range of prognathism with a mandible beyond the normal range of prognathism from those cases presenting a maxilla below the normal range of prognathism with a mandible within the normal range of prognathism. Into these two groups fall nearly 80 per cent of all cases of mandibular prognathism, according to Sanborn.[2]

About 10 per cent fall within the normal range of prognathism; a case of this type is sometimes referred to as a "pseudomandibular prognathism." It is questionable whether this term satisfies the demands of exact description, since a case of anterior cross-bite seldom presents a molar relationship which could be classified as a neutroclusion. Actually, "functional mesioclusion" would be a better term to apply to this type of case, since the position of the mandible is determined by the interrelationship of the incisors.

In present-day case analysis, it is advisable to combine cephalometric analysis with a study of tooth relationship for a fuller understanding of this

Presented before the Northeastern Society of Orthodontists, Montreal, Quebec, Nov. 3, 1958.

dentofacial deformity, since it is obvious that treatment procedures will differ for cases of maxillary retrognathism as differentiated from true mandibular prognathism. Even though the number of cases to be shown is limited, it is hoped that these will show the variations present under the broad classification of mandibular prognathism.

CASE 1.—Leslie A., a girl aged 4 years 3 months, had a condition which was diagnosed as mandibular prognathism combined with a lack of development of the maxillary anterior section (Fig. 1).

Fig. 1.

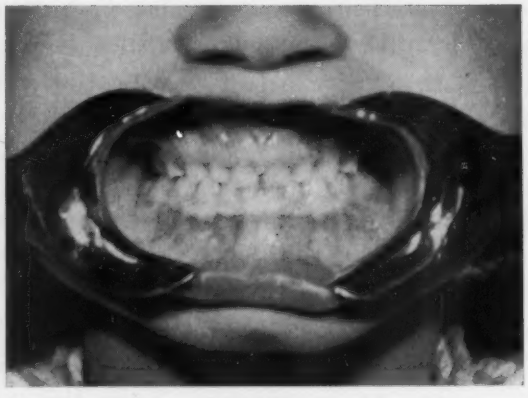

Fig. 2.

On April 25, 1956, a headcap-chincap was fitted and instructions were given regarding the use of the celluloid bite plane. Cooperation was very good, and the anterior cross-bite was corrected in ninety-two days. The chincap and celluloid bite plane were continued for almost another year, however, during which period the chincap was being gradually discontinued. The final photographs were made on Oct. 15, 1956 (Fig. 2). This case will be observed through the period of eruption of the incisors.

CASE 2.—Paul K. presented for treatment at the age of 3 years with a developing mandibular prognathism. As in the previous case, chincap and celluloid bite plane therapy was instituted and the mandibular prognathism was corrected in seventy-two days. Final photographs were made six years after termination of treatment.

Comment.—This technique is an application of extraoral anchorage to the problem of mandibular prognathism. Treatment in the two cases just presented was accomplished without the use of bands, appliances, or Class III

elastics. Had it been necessary to construct bands and appliances for children of this age group, treatment probably would have been postponed and the advantage of optimum time for treatment would have been lost. The two cases shown highlight the ease, simplicity, and rapidity of treatment in uncomplicated cases of mandibular prognathism.

It might be well at this time to show the chincap and other appliances used in this method of treatment.

Chincap.—The headcap is the usual apparatus used for occipital anchorage, but the chincap is made of muslin instead of metal. Four hooks are sewed to the corners of the chincap, and four pieces of elastic webbing to which eyelets have been sewed connect the chincap to the headcap. The muslin chincap is relatively inexpensive, adapts itself perfectly to the chin, and can be laundered in the morning and worn again the same night. Its greatest advantage over the metal chincap is that it absorbs perspiration and does not cause skin irritation.

The lower elastic strap follows the lower border of the mandible. The upper strap is set at an angle, so that the chincap will not slip under the chin.

The chincap is usually worn at night only. When progress in treatment has reached the edge-to-edge relationship of the incisors, however, the patient is given an extra chincap which may be worn during meals.

Celluloid Bite Plane.—The celluloid bite plane, 0.020 inch in thickness, is used as a manually operated bite plane, a term suggested by Brooks Bell. This is cut in a rhomboidal shape, wide enough to include the four maxillary incisors.

The bite plane is placed against the palatal tissue behind the four maxillary incisors, and the child closes on this as the mother presses against the mandibular incisors.

The bite plane is used from thirty to sixty minutes each day. This time can be broken up into ten-minute periods, and a good time for final application of pressure is before the child goes to bed.

The bite plane becomes bent in use and is gradually cut shorter.

One of the advantages of the celluloid bite plane is that there is no interference with lingual movement of the mandibular incisors.

The reverse bite plane is made for the mandibular arch. Several layers of heavy tin foil, the type used for the relief of an upper denture, are placed behind the mandibular incisors. This permits these teeth to move lingually as the maxillary incisors are moving labially. The anterior section has loops incorporated; this permits adjustment. The reverse bite plane is an extension of acrylic which extends from the incisal edge of the mandibular incisors and engages the lingual surfaces of the maxillary incisors. The reverse bite plane is used in those cases in which cooperation in the use of the celluloid bite plane is questionable. It is also used when it seems advisable that the reverse bite plane be worn during meals.

The stainless steel labial arch wire, with an anterior-interior section, is used in those cases presenting with spacing between the mandibular incisors. The hooks engage traction hooks which are sewed to the headcap. The interior wire, which is of a lighter gauge, is in contact with the labial surface of the mandibular incisors for the purpose of condensation of the anterior section.

The following cases are being shown because they present other problems in addition to the abnormal mesiodistal jaw relationship seen in Cases 1 and 2.

CASE 3.—Naomi G. presented for treatment at the age of 10 years 7 months. The maxillary arch was in general mild contraction, and the mandible was in a position of prognathism. Maxillary canines were in occlusion with the first deciduous molars, and the lips were open at rest.

Headcap-chincap therapy was instituted, with a resulting correction of the anterior overbite in three weeks. The chincap was continued for a few more months, when a change was made. Mandibular molar bands, carrying buccal tubes, were cemented, and a stainless steel labial arch wire was inserted to drive the mandibular molars distally. The force was obtained by the use of traction hooks sewed to a headcap.

Maxillary molar bands were cemented; they carried half-round tubes for the insertion of a lingual arch wire. This arch wire was used for expansion of the maxillary lateral halves, particularly on the right side.

When this had been accomplished, the patient was given masseter-temporalis and orbicularis-oris exercises. Treatment time was about thirteen months, and stability of the final result has been excellent.

CASE 4.—Nancy C. presented for treatment at tne age of 4 years 6 months. The case was diagnosed as a true mandibular prognathism combined with congenitally missing maxillary lateral incisors.

Chincap and celluloid bite plane therapy was instituted in September, 1952, and a normal mesiodistal jaw relation was achieved in March, 1953. However, the failure to develop a deeper overbite does not augur well for the future stability of the case. The point to be made here is that space closure is contraindicated in this type of case. Artificial substitutes for the congenitally missing maxillary incisors should be placed in order to maintain maxillary arch length and breadth and to preserve the overbite correction.

CASE 5.—Paula S. presented for treatment at the age of 6 years 9 months. This case was classified as a mandibular prognathism complicated by a cross-bite on the right side which extended from the right molar to the left lateral incisor. In addition, the bite was open anteriorly with a strong tongue-thrust to add to the difficulties. The maxillary arch was normal in width, but the mandibular right lateral half was wider than normal.

On Sept. 18, 1953, a headcap-chincap was fitted. It was suggested that the celluloid bite plane be used for sixty minutes a day. This time was broken down into six ten-minute periods. Six months later mandibular molar bands were cemented, and the chincap was discontinued. A stainless steel labial arch wire was inserted, and traction hooks were sewed to the headcap for condensation and distal movement of the mandibular arch. Maxillary molar bands were cemented and cross elastics were worn for correction of the cross-bite. The mandibular appliance was removed two years later, and measures were taken to correct the open-bite. Whitman exercises were given to correct the tongue-thrust.

Although the change in the profile is most gratifying, there is a grave question of the stability of the final result because of the still uncontrolled tongue-thrusting.

CASE 6.—Donald A. presented for treatment when he was 5 years 3 months of age. The case was diagnosed as a maxillary retrognathism combined with mandibular prognathism (Fig. 3).

Chincap and celluloid bite plane therapy was started on Aug. 31, 1953. By October, 1954, the anterior cross-bite was partially corrected, with the central incisors in normal relation. Maxillary lateral incisors erupted lingually, and a Johnson appliance was used to correct the alignment. Final photographs were made in June, 1957 (Fig. 4).

The result in this case was doubly gratifying, for the alternative to early treatment was an almost certain bilateral resection of the mandible.

The intraoral lateral view, showing an exaggerated freeway space, is an indication of a dual bite and proof that function is not taking place in a position of neutroclusion.

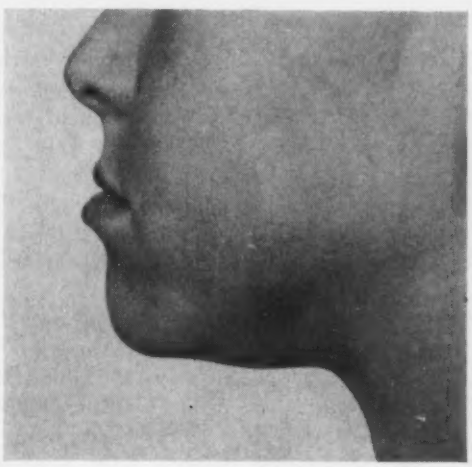

Fig. 3.

Fig. 4.

CASE 7.—The case of Kathleen S. is being presented to show that correction of the mandibular prognathism may be only the first step toward the achievement of a complete orthodontic result.

The patient presented for treatment at the age of 6 years 11 months. The case was diagnosed as mandibular prognathism combined with a cross-bite of the right side and a lack of developmental spacing between the maxillary deciduous incisors. In time, it became obvious that there was present the additional problem of insufficient arch length.

Headcap-chincap therapy was begun in October, 1948. Bands were cemented to the maxillary and mandibular deciduous molars for correction of the cross-bite. Maxillary incisors were moved over in 102 days.

A new study at a later date indicated that there would be insufficient space for the full complement of teeth. Four first premolars were removed, and the case was carried to completion.

This case was under observation and treatment until December, 1955—a total treatment time of seven years. It should be pointed out, however, that the original problem of correction of the mandibular prognathism was completed in less than two years.

CASE 8.—Janet H. presented for treatment when she was 9 years 5 months of age. The almost classic profile indicated that retrusion of the mandible was contraindicated. The problem was purely dental and was classified as a functional mesioclusion. The condition was diagnosed as a lack of development of the maxillary anterior section, combined with a protrusion of the mandibular incisors. The plan of treatment was to correct

the retrusion of the maxillary incisors, with correction of the protrusion of the mandibular incisors. Chincap therapy was not used. Instead, bands were placed upon the maxillary molars and the central incisors, and a labial arch wire was used to carry the incisors labially. A mandibular Hawley retainer, designed to raise the bite temporarily, was inserted at this time. In a few months, the maxillary incisors had been carried forward sufficiently that the labial arch wire and the mandibular bite plane could be discontinued.

The maxillary right lateral incisor was deflected lingually by the deciduous right lateral incisor, whose root failed to resorb. A mandibular Hawley retainer with a partial reverse bite plane to engage the maxillary right lateral incisor, was inserted. Treatment so far has taken about eight months. It will probably be necessary to reband the maxillary arch to place the lateral incisors in correct position.

This case has been included in order to suggest the importance of relating the denture to the face in case analysis and in treatment.

CASE 9.—Maureen M. presented for treatment at the age of 3 years 6 months with a maxillary retrognathism. The profile photograph showed no sign of a mandibular prognathism; yet, the mandibular incisors hid the maxillary incisors completely. The plan of treatment was to stimulate growth for anterior development of the maxillary arch, while correcting the reverse overbite.

Bands were placed on the second deciduous molars and canines. The molar bands carried half-round tubes for a lingual arch wire and double buccal molar lugs for a light ribbon arch. At a later date, auxiliary springs were soldered to the lingual arch for expansion of the deciduous canine areas.

The mandibular arch carried a reverse bite plane, with the acrylic extending over the deciduous molars; this was used at all times, even during meals. A chincap was used to prevent forward thrust of the mandible. Treatment was begun in May, 1955, and the maxillary incisors were labial to the mandibular incisors in five months. The chincap was now being worn only during the day.

Attention was now focused upon the maxillary deciduous canines, since a proper positioning of these teeth is essential to the stability of the final result. Intercanine width was increased only 2 mm. (from 20 to 22 mm.), but this slight change placed the canines in a position of advantageous normal function.

Maxillary molar and canine bands were removed in August, 1957. Total treatment time was two years three months. The case will be observed through transition. It is expected that growth will proceed normally from now on.

CASE 10.—Jacquelyn V. was 6½ years of age when she was transferred to us for continuation of treatment. She had been wearing a chincap for about six months. The case was diagnosed as a mandibular prognathism, with resulting inhibition of growth of the maxillary anterior section. The canine-to-canine area was in contraction. This case is included in this series to show again the importance of correcting this deficiency as a means of ensuring the stability of the final result.

The chincap was continued. A reverse bite plane was inserted for the mandibular arch. Later, bands with Universal brackets were placed on the deciduous canines, bands with half-round tubes and double buccal molar lugs were placed on the second deciduous molars, and a light ribbon arch was inserted. The light ribbon arch was later replaced by sectional arches. A lingual arch wire with auxiliary springs to the deciduous canines was placed.

Fig. 5 shows the reverse bite plane for the mandibular arch with continuous anterior section and springs to the deciduous canines. These were placed to decrease the distance that the maxillary canines would have to be moved.

The progress models made in September, 1958, showed a 2 mm. increase in intercanine width. By placing the maxillary canines in their proper position, the interference with the proper positioning of the mandible has been removed, and the residual growth in the intercanine area should continue.

CASE 11.—The case of Susan D. is included in this series to illustrate some of the problems of retention of Angle Class III cases.

The child presented for treatment at the age of 7 years 5 months with a mandibular prognathism, complicated by contraction of the maxillary right lateral half. Chincap and celluloid bite plane therapy was instituted, and the anterior cross-bite relation was corrected in about ten weeks. The beginning of the transition period delayed treatment for the correction of the lateral cross-bite. This was corrected later, however, and a Hawley retainer was placed to hold the correction. If this case were being treated at the present time, the readjusted lingual arch wire would have been used to retain the lateral cross-bite correction.

Comment.—In cases of unilateral or bilateral cross-bite correction, retention by means of a lingual arch wire is better than the use of a removable retainer, since the presence of clasps in the embrasures may prevent a proper settling of the denture.

Fig. 5.

In the event that a removable retainer is used, as in cases in which artificial substitutes have been supplied, no anterior section is necessary, since there is little chance that the maxillary incisors will move into a position of protrusion.

Retention in uncomplicated cases of mandibular prognathism is really not a problem, since mechanical retention is unnecessary and even undesirable. However, the chincap may be continued for three or four months on a gradually diminishing time scale.

The deep overbite usually achieved with this method of treatment provides the best form of retention possible.

Class III Elastics.—Regarding the amount of force available for purely distal movement of the mandible or the mandibular denture, more than one-third of the force is in a vertical direction and less than two-thirds is available for distal movement.

Successful treatment of cases of mandibular prognathism, using extraoral anchorage, casts doubt upon the adequacy of Class III elastics. There are

other disadvantages to Class III elastics, such as elongation of the mandibular incisors and depression of the maxillary incisors, which results in a shallow overbite. This is the opposite of what we should like to achieve in these cases, since it jeopardizes the stability of the final result.

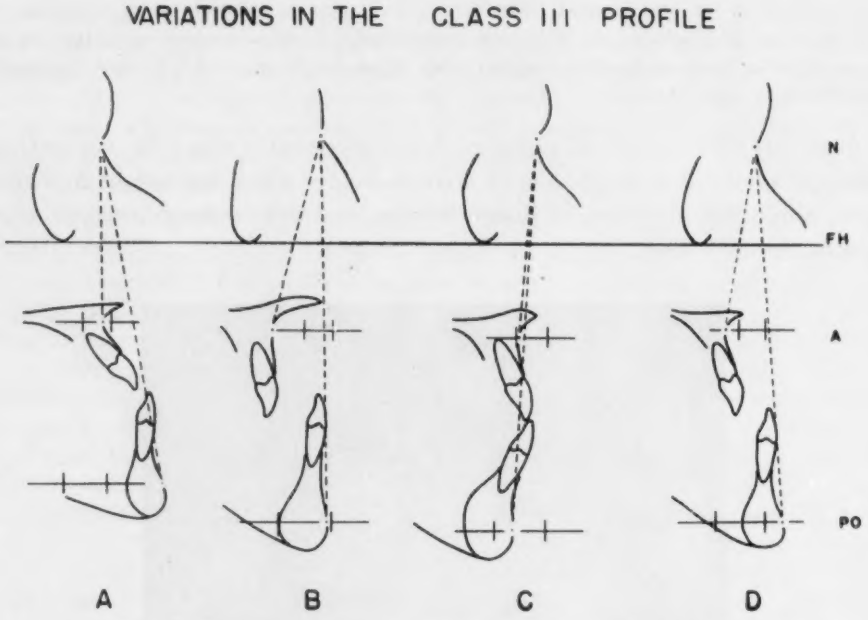

Fig. 6.—Tracings of individual cases representing the four main groups of Class III facial skeletal profiles. The short vertical lines at points *A* and *po* designate the average normal range or standard deviation of maxillary and mandibular prognathism.
(From Sanborn: *Angle Orthodontist*, October, 1955.)

Variations in the Class III Profile, According to Sanborn.[2]—Fig. 6 shows tracings of cases representing the four main groups of Class III facial skeletal profiles:

Group A: Those Class III's presenting a maxilla within the normal range of prognathism and a mandible beyond the normal range of prognathism.

Group B: Those with a maxilla below the normal range of prognathism and a mandible within the normal range of prognathism.

Group C: Those with both maxilla and mandible within the normal range of prognathism.

Group D: Those with a maxilla below the normal range of prognathism and a mandible beyond the normal range of prognathism.

In addition to other findings Sanborn states: "The Class III sample showed a strong tendency toward middle-face deficiency, as the maxilla and its alveolar process was found to be less prognathic than in the normal."

"Three angular measurements showed that the mandible was on the average more prognathic in the Class III sample than in the normal."

The age range for this sample was from 16 to 38 years.

Sanborn concludes: "Consequently, in the appraisal of a Class III malocclusion, it would seem that a broader concept of the condition may be found outside the denture area."

CASES OUT OF RETENTION

CASES 12 AND 13.—The cases of Carol H. and Kathleen K. show the stability of the results achieved ten years after treatment. They also show that the hereditary middle-face deficiency still persists. In the first case, the anterior cross-bite was corrected in two months. In the second case, correction was made in an even shorter period of time. The duration of treatment is a minor consideration; the optimum time for treatment is the important factor.

CONCLUSIONS

A method for the correction of mandibular prognathism has been presented. Extraoral anchorage may be used in cases complicated by impactions in the maxillary arch, in cases in which the use of Class III elastics might be contraindicated, and in cases in which either anterior or posterior teeth are missing.

1. The optimum time for treatment is before the eruption of the six-year molars.

2. Architectural changes in the mandible itself are minimal in the post-pubertal period.

3. It would appear that the repositioning of the mandible in a distal direction and the restoration of normal function provide the basis for growth and development of the face and jaws in line with the child's hereditary pattern.

4. Case analysis must relate the denture to the face to be effective.

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EDITOR'S NOTE: The following article was prepared as a digest of an illustrated paper read before the Northeastern Society of Orthodontists on Nov. 3, 1958.

It is hoped that similar digests will be made of additional papers read before the various sectional societies. Many papers presented before societies are not published because they are not prepared for publication. It is hoped that the digest idea, vigorously urged by Dr. Eby in the Northeastern Society of Orthodontists, will help solve this problem.

THUMB- AND FINGER-SUCKING

T. M. Graber, D.D.S., Ph.D., Kenilworth, Ill.

A SURVEY of medical and dental literature will show that as much has been written about thumb- and finger-sucking as about any other etiological factor in orthodontics. Many questions arise from the welter of contributions in the literature by pediatricians, psychiatrists, social workers and dentists. Can and do these habits create dental malocclusions? Should an attempt be made to break the habits? If so, when? How? Are psychological problems created by such attempts? What about habit transference? If there is dental damage, is it temporary or permanent? Just what role should the orthodontist play, and when should he enter the scene of action? If he is going to intercept the habit, what approach should be used? The present report of a twelve-year study of over 250 cases in which therapy was instituted provides some pretty good clues to the questions posed.

This article is divided into four sections. The first deals with the finger-sucking habit from birth to the age of 4 years. The second deals with finger habits that are active after the age of 4 years. The third section discusses the method, developed in this study, for coping with the habit. The final section summarizes the observations and findings.

BIRTH TO 4 YEARS OF AGE

Authorities on child development recognize the need for a feeling of euphoria or well-being in early life. This means warmth of association, a feeling of being wanted, fondling, a sense of security and, apparently, sucking. While the skeletal musculature is very primitive in the newborn infant, the musculature of the stomatognathic system is highly developed. One of the first physical expressions of the infant is the demand for food—sucking. It has been

Read before the Northeastern Society of Orthodontists in Montreal, Quebec, Nov. 3, 1958.
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pointed out that the hand-to-mouth movement is just one of a series of erratic and akimbo motions that are perfectly normal for the newborn. These motions may persist until the second and third years of life. The activity disappears as the child learns to control his limbs and as grosser movements are joined by the finer and more complex muscle activities. There is a broad range of normalcy here, but general agreement among observers recognizes that finger-sucking is to be expected in most infants during the first year and a half of life. Anyone who advises a parent to break up this needed reflexlike mechanism during the time that it is normal to expect such action ignores the basic physiology of infancy. Since homeostasis, or adaptability, is a fundamental phenomenon of physiology, some infants will adapt to the restrictions, sublimate their habit activities, and apparently turn to other environmental satisfactions or more mature behavior patterns. But many children will not. The habit is made more pronounced, so that it does not autonomously disappear as it would have if the child had been left alone.

This study indicates that the failure of ill-advised or ill-devised attempts to break the habit or constant badgering of the child to keep his finger out of his mouth may boomerang. Some children seize this as an opportunity to attract the parent's attention at will, and the habit becomes a potent attention-getting mechanism. It is unwise for a parent to call attention to the habit in a deprecatory manner during the time it is a normal facet of child behavior. This observation holds true in many cases for the group beyond the age of 4 years. An analysis of carefully compiled case histories shows repeated instances of early parental displeasure and ineffectual habit-breaking attempts. For many children, this is a plausible basis for continuation of the finger-sucking beyond the time that it would normally be supplanted with more mature behavior patterns. This, of course, is not the whole answer. The mosaic of causation is incomplete. Present knowledge comes largely from inductive reasoning and not from the patient himself. Inductive reasoning is an admirable didactic tool, but it is inexact at best. Teleology is valuable only if it is followed by the next logical step—the development of more definitive criteria to lift the concepts into the realm of fact. Thus, there is some question about the dire predictions of many psychologists that personality defects may result from attempts to intercept finger habits, even during the time that it is normal to expect such habits. Claims of frustration, psychic trauma, habit transference, habit problems, and adult neuroses are frequently encountered in the literature. It is difficult to accept the Freudian hypothesis that thumb-sucking is an expression of sexual gratification and that this is the major basis for the habit. Current trends in psychiatry deprecate the strong emphasis on retroactive reasoning and look to more logical and more likely etiological entities. Hereditary predisposition looms increasingly larger as a major factor, with strong assistance from the home and work environment, from motivations, and from relative success in our competitive society. The present study has not borne out claims of psychological disturbances as a result of placing interceptive appliances. Habit transference has not been observed.

Thumb- and finger-sucking habits, then, are considered a normal developmental facet of the first two to three years of life. The habits gradually decrease in intensity and disappear if left alone. This observation is conditioned by an important prerequisite—a reasonably happy and normal home environment. A corollary to this is the acceptance of the child by his peers. For this early age group, the damage is usually temporary and confined to the anterior segment if the child starts with a normal occlusion. Controversy over the possible damage from prolonged finger-sucking habits emphasizes the importance of knowing each child's inherent dentofacial morphology. Since the damaging consequences of the habit are similar to the characteristics of a typical Class II, Division 1 malocclusion, it is easy to assume that the retrognathic mandible, prognathic premaxillary segment, deep overbite, flaccid upper lip, high palatal vault, and narrow dental arches are the result of the finger-sucking. It is probable that a superimposed finger-sucking habit has relatively little effect on the ultimate configuration of the teeth and jaws. In theory, it is possible to construct a neat sequence, attributing the total maxillary protrusion to the sucking habit, by assuming that the increased and frequent pressures from the buccal musculature tug on the pterygomandibular raphe just behind the tuberosity and thus force the maxillary denture forward. In practice, if a child has a normal occlusion and muscle balance initially and the finger-sucking disappears by the third year of life, he seldom does more than reduce the overbite, increase the overjet, and create incisor spacing in the maxillary arch. There also may be slight crowding or lingual malposition of the lower incisors. Growth and development and autonomous adjustment will usually eradicate these aberrations.

ACTIVE FINGER-SUCKING AFTER THE AGE OF 4 YEARS

Most patients in this group present clear case histories of familial habit-breaking attempts. This is considered one logical basis for continuation of the habit beyond the time when it normally would have been dropped. Most frequently it is the child's father who is most disturbed and most likely to try to break the habit by obvious displeasure, by admonition, or by actual punishment.

The permanence of the deformation of the occlusion increases markedly in children with active finger-sucking habits beyond 3½ years of age. It is here that the severe open-bites, buccal cross-bites, and marked maxillary protrusions are encountered. It is important to recognize that the finger habit is only part of the picture. With the increase in overjet that accompanies so many finger-sucking habits, normal swallowing procedures become increasingly difficult. Instead of the lips containing the dentition during deglutition, the lower lip cushions to the lingual of the maxillary incisors, during both rest and active function (Fig. 1). Perioral muscle aberrations, compensatory tongue-thrust during swallowing, and abnormal mentalis muscle activity may accentuate the malocclusion. Deformation proceeds in a more concentrated fashion than with

the most confirmed finger habits alone. The real danger, then, is for the finger habit to change the occlusion sufficiently to allow the more potent deforming muscular forces to create full-fledged malocclusions (Fig. 2).

Fig. 1.

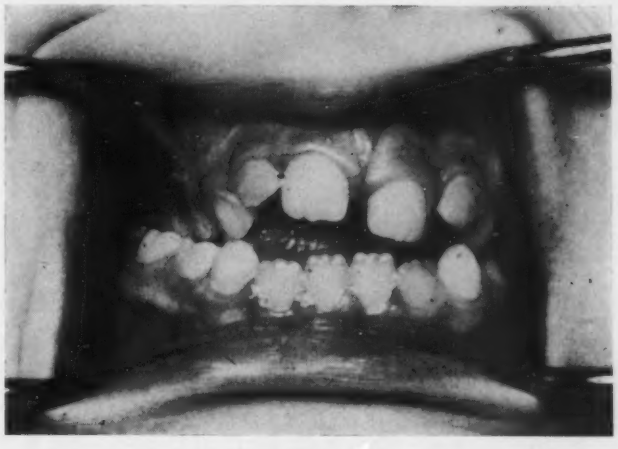

Fig. 2.

Duration of the habit beyond the third year of life is not the only determinant. In addition to the inherent pattern are at least two other important considerations. The *frequency* of the habit during the day and night qualifies the end result. The child who sucks sporadically, or just when going to sleep, is less likely to create damage than the one who constantly has his finger in his mouth. The *intensity* of the habit is also important. With some children, the perioral muscle function and facial contortions are easily discernible, with an audible accompaniment. In other children, the habit is little more than the

passive insertion of the finger in the mouth, with no apparent buccinator activity. If the forefinger is the favorite digit, more damage may be expected if the dorsal surface rests fulcrumlike on the lower incisors instead of the palmar surface being hooked innocuously over the same teeth.

This, then, is the trident of factors that must be recognized and evaluated before the question of damage to the teeth and investing tissues is answered. The inherent dentofacial pattern, duration, frequency, and intensity *must* qualify the conclusions of the psychiatrist, pediatrician, and orthodontist on this important question.

Physical damage is not the only consequence of prolonged finger-sucking habits. In almost all the case histories dotted with unsuccessful attempts to break the habit, the child is aware of the obvious displeasure of the parents. Some children recognize sucking as an infantile characteristic and want to stop the habit, but find it hard to do. Such a failure may well put the child on the defensive, and it fosters an attitude of defiance or frustration. We have only to examine our own failings in self-discipline and our reactions when "called on the carpet" to better appreciate the child's problem. As has been pointed out, the habit becomes an attention-getting mechanism with many children. This does not enhance domestic tranquility, particularly when the parent is aware of the possibilities of permanent damage. In still other children, the habit is just slow in disappearing. It is enjoyable, it has been ingrained by constant repetition, and the child has not transferred his pleasure-getting to the more mature, extrovertive activities expected of children his age. The child may have a slower rate of maturation than the median group. If the finger-sucking is not a symptom of a broader behavior problem, the mental hygiene of both the child and the parents can be helped by guiding the child past this roadblock along the road to maturity, by eliminating the early conflicts between the child and the parents, and by preventing a permanent malocclusion with its associated unfavorable health and psychological aspects.

APPLIANCE THERAPY AND GUIDANCE

A thorough oral examination is made on the first visit, but the case history is taken with the child out of the room. An attempt is made to get information on the etiology, intensity, frequency, duration, chronology, mental attributes, family environment, school and play environment, siblings, response under stress, associated abnormalities, parental attitude, previous habit-breaking attempts, psychic superstructure, etc. Children with behavior problems, in whom finger-sucking is only one of many symptoms, are referred for psychiatric guidance. Children from broken homes or environments of great tension or conflict are considered poor risks for interceptive appliances. They are carried on a "visit-and-talk" routine, in the hope of establishing a rapport and, thus, therapy through suggestion. Some of these children have become appliance cases later, but only after a better understanding of the child's actions and motivations has been gained. A mimeographed information sheet is given to the parents to read, with particular emphasis on the father's participation. If

the case history and consultation with the parents indicate a reasonably normal environment, an interceptive appliance is recommended for placement in late spring or early summer. At this time, the general health is likely to be good, and outdoor play renders a sublimating assist. The stock response to leading questions by the patient is, "Our job is to help you by making your teeth strong, straight, and healthy." The aim of the appliance is to eliminate the kinesthetic, neuromuscular satisfaction associated with the habit, thus rendering the sucking meaningless.

The appliance is fabricated on the maxillary cast. The important design characteristic is that the cross-palatal structure is sufficiently removed from the palate to break the suction. The crib should prevent further deformation of the maxillary anterior segment by the finger and tongue (Fig. 3). The use of full metal crowns and 18-gauge base wire confers adequate strength and rigidity. In extreme open-bite cases, the spurs may be bent down behind the lower incisors on occlusion to prevent the powerful tongue-thrust. After cementation, a temporary open-bite is expected, but this closes down rapidly. A residual speech defect is common, but this improves and is lost entirely with removal of the appliance.

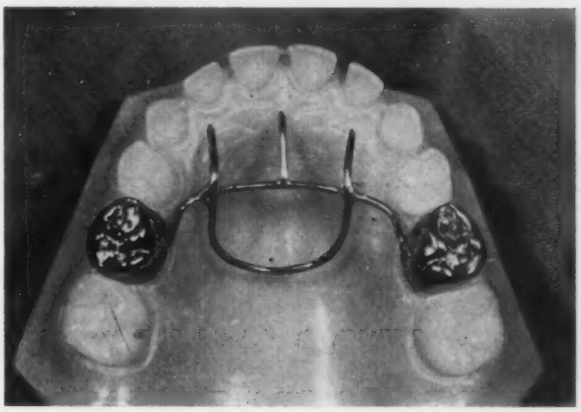

Fig. 3.

The bulk of the appliance is gradually reduced after sixteen to twenty weeks. First, the spurs are clipped, then the loop, and, when it is apparent that the old habit pattern has been re-educated, the cross palatal bar and bands are removed. In over 250 cases, the percentage of success has been 92 per cent. It is felt that the remaining 8 per cent could be further reduced by improved case selection and proper treatment time.

SUMMARY

The finger-sucking habit, normal in the first two or three years of life, may cause permanent damage if continued beyond this time. Of gravest concern is the creation of an excessive overjet which, in turn, fosters abnormal lip and tongue muscle activity. It is this activity that causes the real damage so often

attributed to the finger habit alone. There are several conditioning factors, the most important being the original morphology, the duration, the frequency, and the intensity of the sucking habit. For the normal child, the placement of an interceptive appliance after the age of 3 to 4 years can eliminate muscle perversions and allow autonomous adjustment of the incipient malocclusion.

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SURGICAL CORRECTION OF PROGNATHISM

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THE surgical correction of prognathism is a procedure that dates back more than 100 years. In 1849 Hullihen[1] described a technique for the correction of such a deformity. Since that time refinements of technique and various methods have been described. At the turn of the century Blair[2] published several articles on this particular subject. Interest in the subject and in the various techniques used in its correction became widespread. After Blair, came reports from Kazanjian,[3] Dingman,[4] Reiter,[5] Caldwell and Letterman,[6] Moose,[7] and many others.

This article will in no way attempt to put forth a new procedure or even a refinement of the previously published and proved ones. Rather, it is a review of the more successful techniques and indications for their application. Special attention will be given to the surgical procedures with which I have had experience.

Basically, there are only two means of surgically correcting prognathism. One is by ostectomy (removal of a portion of bone from the mandible) and the other is by osteotomy (sectioning of the mandible). Either of these procedures may be carried out by surgically opening the area of the mandible to be treated. The osteotomy may be accomplished by the closed or "blind" approach.

In my opinion, there is no one best method for the surgical treatment of all cases of prognathism. The oral surgeon should be familiar with at least three of the diverse basic techniques of surgical correction so that he may fit a surgical approach to the case at hand instead of making each prognathic problem fit a single method of treatment. The technique recently described by Caldwell and Letterman[6] and Shira[8] may be near the perfect operation, but even here there are drawbacks to the procedure.

The open surgical approach has been criticized because of the resultant scar. Incisions may be placed at the inferior border of the mandible, however, so that they are normally not visible, and in the posterior approach they may follow the natural lines and folds in the neck. I have not found the incision line scar objectionable in prognathic cases treated by ostectomy through the body of the mandible.

The criticism of the closed osteotomy is based on possible injury to normal anatomy, namely, uncontrolled hemorrhage, injury to a branch or branches of the facial nerve, and the possibility of nonunion of the sectioned fragments due

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to imperfect apposition. However, Verne and associates[9] report a series of fifty-two cases treated by blind osteotomy without untoward sequelae. This report includes postoperative observation up to ten years.

OSTECTOMY

Under the broad heading of ostectomy of the mandible for correction of prognathism, there are at least three procedures worthy of detailed description.

The first is the subsigmoid ostectomy described by Smith and Robinson.[10] This is a procedure whereby the lateral surface of the ramus is exposed to the level of the sigmoid notch via a posteroinferior incision. A block of bone of previously determined dimension is removed from the subsigmoid area. A condylotomy is carried out at the lower level of the block; the mandible is moved back to its desired position, and the condylar fragment is fixed by an intraosseous wire. (Of course, this and all other described procedures are completed bilaterally.) The mandible is held in position by intraoral elastics or other suitable fixation until bone healing takes place.

The technique of my choice in this category is that of ostectomy through the body of the mandible as described by Blair,[11] with refinements in the procedure as developed by Dingman.[12]

The operation is performed in two stages. Following careful work-up with models and roentgenograms, the site and size of the ostectomy are determined. The site is usually in the first molar area.

The first stage is done in the office. This consists of removal of the first molar (assuming that there are no edentulous areas which could be incorporated in the ostectomy) and subperiosteal reflection of the soft tissue on the buccal and lingual surfaces of the mandible to the approximate level of the mandibular canal. The desired section of bone is measured and marked off on each surface and, by means of a surgical burr, cuts are made through the cortex only at each mark and to the desired level. The soft tissue is approximated by sutures. Fixation appliances are put in place at this visit in order to save time later in the operating room. After soft-tissue healing is evident (seven to ten days), the patient is admitted to the hospital for completion of the procedure.

The second stage consists of exposure of the previously prepared site by surgical dissection through an incision placed at the inferior border of the mandible. By careful retraction of the soft tissue, the burr cuts made in the first stage of the procedure are brought into view. Again by use of the surgical burr, the cuts are continued from the buccal surface down to the inferior border of the jaw and up the lingual surface to connect with the original ones on that side. The buccal surface is then decorticated, and the contents of the mandibular canal are identified and protected. Preparation for the placement of an intraosseous fixation wire is made prior to completion of the ostectomy. The mandibular canal is "countersunk" in each direction to accommodate the now excessive length of its contents. The mandible is repositioned and fixed by an intraosseous steel wire, and the soft tissue is closed in layers. Intraoral fixation is also attained, thus completing the correction. By careful surgical

technique, we have maintained sensory innervation to the soft tissue and the dental structures, we have not contaminated the open bone by oral fluids, and we have been able to visualize the approximation of the bone ends. All in all, I find that it is a sound procedure.

The third ostectomy is a technique recently brought to my attention in a report by Pankow.[13] Briefly, the operation consists of the removal of a triangular portion of bone from the ramus. This is a horizontal ostectomy of the ramus, with the base of the triangle at the anterior border of the ramus. The procedure is especially indicated when there is a marked open-bite in connection with the prognathic deformity. The triangular section of bone is removed by direct visualization following surgical exposure of the area through a posteroinferior incision. Transosseous wiring and intraoral fixation are employed.

OSTEOTOMY

In the realm of surgical correction of prognathism by osteotomy, there are several techniques worthy of mention:

A. Osteotomy of the ramus in the horizontal plane by the closed approach with the Gigli saw.

B. Osteotomy of the ramus in the horizontal plane by an open intraoral approach with a stabilized mechanical device, such as the Cayo saw.

C. Subcondylar osteotomy by the closed method with a Gigli saw.

D. Subcondylar osteotomy by the open approach with a surgical burr in a straight handpiece.

E. Osteotomy of the ramus of the mandible in the vertical plane by direct visualization and with the use of the surgical burr and the osteotome.

There are various means of accomplishing method A. The technique that I use will be described. By an intraoral approach, a ½ inch incision is made through the mucosa at the anterior surface of the ramus superior to a horizontal plane through the position of the mandibular foramen. The opening is carried down to the periosteum by blunt dissection. The periosteum is incised, and a rounded periosteal elevator is inserted. By this means, the periosteum is elevated from the medial surface of the ramus in the inferior and superior directions. A curved aneurysm needle is introduced subperiosteally and, following on bone, its point is palpated at the posterior surface of the ramus. A ½ inch incision is made through the skin, and the opening is carried to the periosteum by blunt dissection. The periosteum is incised, and smooth retractors are placed, carrying the soft tissue medially and laterally to the point of the aneurysm needle. This needle point is brought into view and a Gigli saw is attached. The saw is carried back through the incision into the oral cavity. Retraction of the soft tissue at the posterior opening is continued, as well as retraction of the lips and cheek. The osteotomy through the ramus is completed, and the soft tissue is closed after removal of the Gigli saw through the

mouth. Fixation appliances are placed; the mandible is then repositioned and immobilized. The mediolateral relationship of the ramus is determined by palpation and confirmed by immediate roentgenograms.

The technique for attaining correction by method C is essentially the same except for the position of the osteotomy. The Gigli saw is placed in a position to section along a line from the lowest point of the sigmoid notch to the center of the posterior surface of the ramus in its vertical dimension; thus, the free condylar portion of the mandible is carried to the lateral surface and the mandible is repositioned and immobilized. This technique, with variations, has many exponents, namely, Reiter,[5] Verne,[9] Bourgoyne,[14] and others.

In Method B, the osteotomy is performed in the same area as A. In procedure B, however, visual access to the area is achieved via an intraoral approach. An incision is made at the anterior border of the ramus, the soft tissue is dissected from its medial surface, and pertinent anatomic structures and/or locations are identified. A retractor is then placed in such a position that access to the posterior border of the ramus is obtained. The ramus is sectioned at the desired level and in the desired plane with a bone saw. Numerous devices have been developed for this purpose; some are manually operated and others are mechanical. The innovation of the Cayo saw brought a marked improvement in the mechanics of this procedure. This is a high-speed saw blade that will section the bone satisfactorily but will not damage the soft tissue with which it comes in contact. This is due to the saw's high velocity plus extreme shortness of stroke which cause the soft tissue to be carried with the blade; cutting action is noted only in immobile dense tissue, such as bone. An advantage of this technique is the comparative facility of intraosseous fixation of the sectioned portions of the ramus in the corrected position. Intraoral fixation is applied in the usual method.

Method D is an improvement in technique over the closed subcondylar osteotomy and still maintains the advantage of minimum surgical trauma. The osteotomy is performed following surgical exposure of the subcondylar area through a preauricular incision. A distinct advantage noted here is in the protection of branches of the facial nerve by identification and retraction. The osteotomy is carried out by use of a surgical burr in the dental handpiece. The medial surface of the condylar fragment is freed of its muscle attachment and is then carried to the lateral surface of the ramus. In this way bone-to-bone contact is made without the possibility of incorporation of soft tissue in the contact area and the consequent probability of nonunion or fibrous union. Even considering this advantage, immobilization should be maintained for a longer period of time than is necessary in instances where contact of fresh cancellous bone is attained.

Method E, as originally described by Caldwell and Letterman[6] in 1954 and later reported by Shira,[8] may prove to be the most versatile of the various surgical means of correcting prognathism. It incorporates maximum bony contact for firm union, ability to correct the marked open-bite, and minimum time of

immobilization plus the previously stated advantages of the open surgical approach. Disadvantages of this technique include the comparatively large incision necessary for indicated dissection, surgical loss of contact area for some of the muscles of mastication, and the length of time required for actual surgery.

Briefly, the technique involves surgical exposure of the lateral surface of the ramus through a posteroinferior incision. Burr holes are made through the lateral cortical plate from the sigmoid notch, in a vertical line posterior to the mandibular foramen, to the inferior border of the mandible. Prior to completion of the osteotomy, the tip of the coronoid process is sectioned and allowed to lie free by its attachment to the temporal muscle. The vertical osteotomy is then completed. The mesial (or anterior) portion of the ramus is decorticated to a measured extent for the correction. The internal pterygoid muscle is then freed from the distal portion of the sectioned ramus; through-and-through burr holes are made in this portion to enhance bony union. The correction of the deformity is then accomplished, and intraoral fixation is applied. The distal (or posterior) ramal fragment is now placed in position over the decorticated mesial area and fixed in place by transosseous steel wires. With closure of the soft tissue in layers, the procedure is completed. Caldwell reports several successful cases corrected by this technique.

SUMMARY

Surgical intervention in the treatment of Class III malocclusion is indicated in those instances in which the deformity cannot be satisfactorily treated orthodontically and in those instances in which the deformity is the result of an uncontrollable physiologic or external traumatic reaction. It is contraindicated in those patients whose physical status will not allow such a procedure and in the patient who is not extremely interested in necessary correction. The patient must be completely cooperative and must be made to understand what the procedure entails, what discomfort is to be expected, and the treatment time involved, with emphasis on the weeks of immobilization of the mandible. If the patient is a minor, of course, legal consent for such an operation is essential. Over and above legal consent for any of the foregoing procedures, one needs the patient's consent and desire in order to obtain truly successful correction of the deformity.

In severe Class III deformity, surgery is but one step in the correction. Orthodontics plays as much of a role in the restoration of occlusion here as it does in any indication for orthodontic service. The question then arises as to the timing of surgical treatment in relation to orthodontic treatment. The answer depends wholly on the relationship of the maxillary and mandibular arches in the *corrected position.* Surgery should precede the institution of orthodontic treatment if satisfactory interarch relationship is obtained in the corrected position. In this instance, the maximal intercuspal correction is obtained as a final step to complete restoration of occlusion. The surgery involved provides optimal correction of a gross deformity, but it cannot supply the finesse in cuspal interdigitation that orthodontics provides.

In further answering this question, we recognize two extremes of the presurgical interarch relationship. One is that extreme in which the maxilla is so constricted that, in the corrected position (via study models), the posterior teeth of the mandible are in complete buccoversion to the posterior teeth of the maxilla. Some contact of natural dentition in the posterior area is preferable prior to surgical treatment. Granted that arch expansion is an extremely difficult and tedious process, it is indicated here rather than the use of bulky intraoral splints during the period of immobilization following surgery. Even with the use of splints to afford contact for immobilization and fixation, thereby making surgical correction feasible, the problem of interarch relationship still exists following surgery. Fortunately, this sequence of occlusal deformities is seen in only a small percentage of cases.

The second extreme, and the more common accompanying problem in prognathism, is one in which there is a marked flaring-out of the maxillary dentition. The deviation from the normal axial inclination varies greatly. Here, again, presurgical orthodontic therapy is indicated to bring the occlusal surfaces of the posterior maxillary teeth into serviceable contact with those of the mandible in its corrected position. Again, the final correction of intercuspal contact is in postsurgical treatment.

This, then, makes it extremely difficult to answer another question which always arises: "At what age may treatment be started for the correction of prognathism?" This question can be answered only after sufficient consultation on each specific patient's problem. In my opinion, the *minimum* age for surgical intervention is 14 years, provided that in the mandible the second molar is fully erupted and the third molar has elevated its occlusal surface in the normal erupting line. I have received personal communications concerning satisfactory correction by surgery in patients years younger than 14 years of age. However, the known principles concerning growth and development of the mandible preclude the advisability of such a procedure. The aforementioned minimum age of 14 years, with its accompanying "rules of thumb," finds most indications in the female patient. Hence, the age problem depends on the need for presurgical orthodontics and the time at which such treatment may be started. At any rate, consultation, the first step in treatment, should be instituted as soon as the deformity is recognized. The primary consulting group should include the orthodontist, the pediatrician, and the oral surgeon.

In the event that surgical treatment of the condition is the choice of the consultants, the procedure is then presented to the patient for his decision. Two pertinent facts influence him greatly: (1) the attainment of normal occlusion and (2) improvement in facial contour and jaw relationship. Granted that improvement in appearance is sometimes striking, a great number of these patients are more impressed by the improved occlusal harmony.

Regardless of the results that we desire, there are complicating factors which must be mentioned. Uncontrollable sequelae include infection, especially osteomyelitis. This particular entity has been greatly controlled in recent years

with the advent of antibiotics, but it is still a possible complication of any surgical manipulation of bones. Another factor may involve nonunion of the bone ends. Solution of this disturbing result usually requires a second surgical procedure. A third untoward effect, more often noted in the various osteotomies, is the possibility of an open-bite following correction. This condition, according to its extent, may require secondary procedures before acceptable results are obtained.

Since these sequelae are possible through no fault of the oral surgeon or the orthodontist, the patient must also be prepared to accept his portion of the risk. If this is understood prior to treatment of the condition, then ultimate good results are more within the reach of all concerned. In my opinion, correction of this gross deformity is one of the greatest services which our profession has offered mankind.

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Francis Bldg.

SKELETAL DEVELOPMENT AND TOOTH ERUPTION IN ATLANTA CHILDREN

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THE growth of children has long fascinated poets, parents, and pediatricians. The complexity of the biologic system that we call a growing child has, however, left us only partially satisfied with our methods for describing growth. Height and weight with respect to chronological age are the easiest and usually the most available measurements, although it was not until 1777 that the first growth curve was published.[4]

Not all manifestations of growth can be quantitatively evaluated as readily as can height and weight. Some parts of the body, and frequently those that are the most important clinically, grow in so complicated a fashion that qualitative description is still the best means for dealing with them.

The pattern of tooth eruption is one such growth complex which is best described in terms of arbitrary stages or norms. As with more quantitative measurements, such stages or norms are based upon a selected population, the size of which is limited by time, money, availability of subjects, or all three factors. Few such sets of standards are so national in scope as to fit with equal accuracy everywhere in the United States. For this reason, we have undertaken to compare published norms from other parts of the country with the development of dentition and development of hand and wrist bones in a group of Atlanta children.

MATERIALS AND METHODS

We have used 147 records of chronological age, tooth development age, and hand and wrist development age of twenty-five white boys and thirty-six white girls from Atlanta, Georgia. From one to six annual observations on each child were avaliable. The children ranged in age from 4 to 15 years (Fig.1).

All were from families of less than median income, and all were undergoing developmental supervision but not orthodontic treatment at the Emory University Orthodontic Clinic. Schour and Massler's[3] chart on development of the human dentition, distributed by the American Dental Association, was used to estimate dentition development as determined by full-mouth roentgenograms of our subjects.

The *Radiographic Atlas of Skeletal Development of the Hand and Wrist* by Greulich and Pyle[1] was similarly used for comparison with hand and wrist

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plates which have been routinely taken at the same time as the full-mouth roentgenograms at the orthodontic clinic. Reasonable, but not excessive, care was taken in making the comparisons. We felt that no more precision than that exercised in good clinical practice should be employed if the true usefulness of the standards was to be evaluated.

Schour and Massler's dentition development stages are by years, and it was felt permissible to interpolate to half-years. Development was considered normal if the child fitted the nearest standard. Where actual age lay midway between stages, either the higher or the lower one was considered to be a normal estimate.

Hand development was estimated similarly, but Greulich and Pyle stages are not all at equal intervals from one another. It was necessary to construct a table of their stages with half-stages estimated in some cases but not in others. The slight irregularity resulting is less than the experimental error, so we feel that it is an adequate means of analysis. Where we have expressed a child's deviation from the expected stage of development, we have taken the difference between his actual hand developmental stage and the nearest stage to which he could have been assigned on the basis of his chronological age. Thus, a boy whose chronological age is 87 months could be expected to fit the Greulich and Pyle male standard 16 for 84 months. If his hand development actually agreed with male standard 15 for 72 months, the difference was considered as 84–72 = 12 months (standard nearest true age – standard of best fit) and not 87–72 = 15 months (true age – standard of best fit).

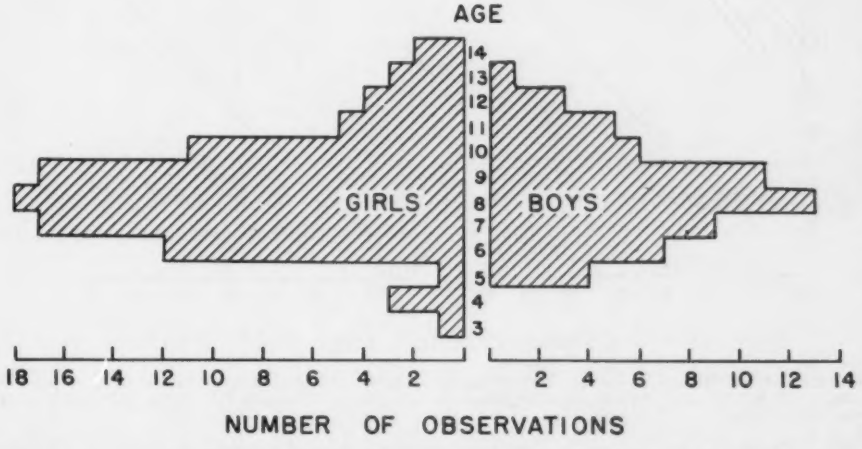

Fig. 1.—Sex and age distribution of observations of tooth eruption and hand development of sixty-one Atlanta children.

A check on the reliability of the hand development estimations was made by repeating the observation on ten plates withdrawn at random one month after the original determinations were made. Six of the ten estimates agreed exactly with the earlier ones; four differed by two to four months. The standard deviation of estimate worked out to ± 1.8 months.

RESULTS

Skeletal Age.—Atlanta boys and girls are in close agreement with each other. Both start about one-half year behind Greulich and Pyle standards for their sex at 5 years of age, and both catch up to the developmental level of the standard by the age of 15.

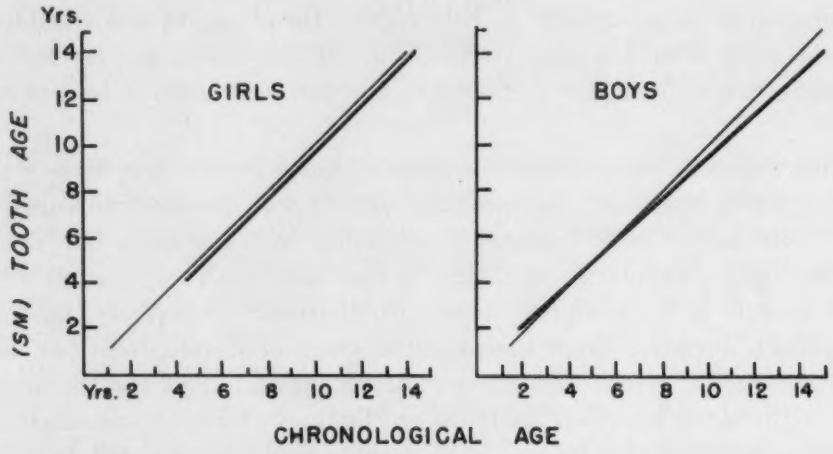

Fig. 2.—Relationship between chronological age and estimated tooth eruption age of sixty-one Atlanta children (heavy line) compared with Schour and Massler standard (light line).

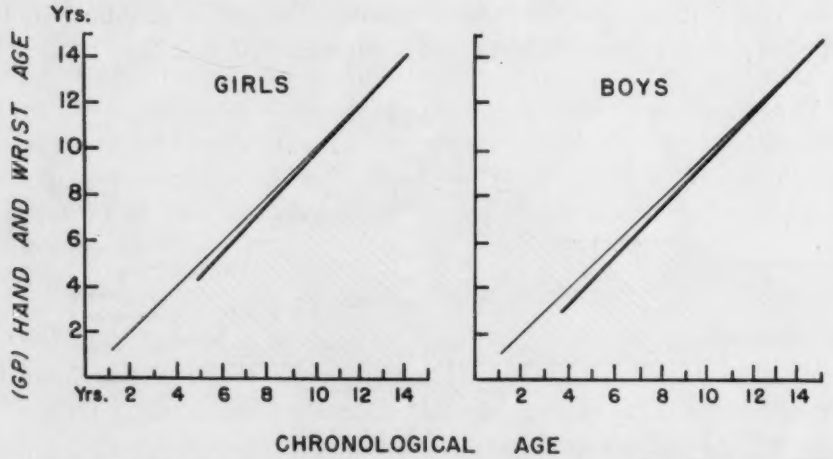

Fig. 3.—Relationship between chronological age and estimated hand and wrist developmental age of sixty-one Atlanta children (heavy line) compared with Greulich and Pyle standard (light line).

Tooth Eruption.—Atlanta boys agree well with Schour and Massler standards at the age of 5 years, but they develop a little more slowly. At 10 years of age they are six months retarded, and at 15 years they are almost a year behind.

Girls, on the other hand, develop at the same rate as Schour and Massler standards, but are two months behind at all ages of the series.

Variation.—The variation of our data from the expected values was less than might have been anticipated from the sample size. Hand plates had a

standard deviation of 0.89 and 0.91 from Greulich and Pyle stages for boys and girls, respectively. These values are equal to about 10.7 and 10.8 months. This is very close to the standard deviations of the original Greulich and Pyle data.

Variation in tooth development levels amounts to a standard deviation of 4.0 months for boys and 7.5 months for girls. The Schour and Massler standard chart, distributed by the American Dental Association (second edition, 1944) but not as originally published, gives plus and minus values for each stage. It is not stated whether these mark the range of their data or the standard deviation. If the latter be the case, our deviations are of the same order.

TABLE I. HAND AND WRIST DEVELOPMENT AGE OF ATLANTA CHILDREN AS COMPARED WITH GREULICH AND PYLE STANDARDS

CHRONOLOGICAL AGE (YEARS)	DIFFERENCE FROM GREULICH AND PYLE STANDARDS (MONTHS)	STANDARD DEVIATION	
		ATLANTA (MONTHS)	GREULICH AND PYLE STANDARD (MONTHS)
	Boys		
5	−5		±8.79
10	−4	±10.7	±9.79
15	0		±11.32
	Girls		
5	−7		±11.65
10	−5	−10.8	±11.73
15	0		±9.23

Boys: 57 observations of 25 boys
Hand age = −0.478 years + 1.0377 chronological age
Interval = half years (approximately)

Girls: 86 observations on 35 girls
Hand age = −0.859 years + 1.0627 chronological age
Interval = half years (approximately)

Figs. 2 and 3 show the above relationships in graphic form, and Tables I and II give the actual values for rate of progress, amount of variation and relation to the standard curves.

DISCUSSION

In 1928 Howard[2] made hand plates of normal Atlanta children. This was long before the Greulich and Pyle *Atlas* appeared and nine years before Todd's[5] *Atlas*, which was a precursor of the Greulich and Pyle study. We have taken Howard's radiographs as they appear in his printed paper and compared them with our own results. He used fifty children of each sex at each year of age and illustrated one typical hand plate for each sex at each age. His hand plates of boys showed a one-year lag behind Greulich and Pyle levels at the age of 5. This lag persisted until the ages of 13 and 14, when his subjects overtook the standard. His girls' hand plates showed excellent agreement with the modern standards. If we had all fifty of his plates at each age, it is possible that the agreement would be even better.

TABLE II. TOOTH DEVELOPMENT AGE OF ATLANTA CHILDREN AS COMPARED WITH SCHOUR AND MASSLER STANDARDS

CHRONOLOGICAL AGE (YEARS)	DIFFERENCE FROM SCHOUR AND MASSLER STANDARDS (MONTHS)	STANDARD DEVIATION	
		ATLANTA (MONTHS)	SCHOUR AND MASSLER STANDARD* (MONTHS)
	Boys		
5	0		±9
10	−5.5	±3.9	±9
15	−10.5		±6
	Girls		
5	−1.9		±9
10	−1.9	±7.5	±9
15	−2.0		±6

Boys: 57 observations on 25 boys
Tooth age = 0.391 years + 0.9154 chronological age
Interval = half years

Girls: 90 determinations on 35 girls
Tooth age = −0.158 years + 0.9993 chronological age
Interval = half years

*See text for discussion.

As in Howard's data, our boys start with an appreciable delay and catch up by the age of 15. Our girls are similarly retarded at the start of the series, but the girls of Howard's series were not. Both sexes in our series have a slightly faster rate of development than the Greulich and Pyle standard and arrive at the age of 15 precisely on schedule.

This acceleration in developmental progress means that in practice it may not be possible to bear out the hope expressed by Greulich and Pyle:

> If these standards are found to be too advanced or too retarded to fit satisfactorily some racial or other special group of children, the age equivalents of the standards can be scaled upward or downward in order better to conform to the developmental rate of the particular group.

This is due to the fact that the rate of progress (slope of the curve) may vary as well as the retardation or acceleration (y intercept).

Tooth development in our girls follows the Schour and Massler standards almost perfectly. The retardation of two months is less than the standard deviation of either series. Rate of progress from stage to stage is the same. The boys, however, starting at the age of 5 in step with the standard chart, show a slower rate of progress, falling gradually behind the norm.

We are unable to be certain why conformation to the standards should be poorest in tooth development of our boys. Hand development is not the same for the two sexes, and separate standards are provided by Greulich and Pyle. This is not the case for the tooth development chart. Male and female development may not be identical, and the Schour and Massler standard may conceal this by averaging both together. The lack of any information on the technical construction of the norms makes it impossible to decide this. It is possible, also, that boys are not brought to the clinic in the absence of

frank developmental retardation or defects, while greater parental concern for the appearance of their daughters would send the latter to the clinic before any defect was manifest.

There is little question that new standard tables for development of dentition are needed. In view of the differences between our boys and girls and their relatively small variability, it seems probable that separate male and female standards should be constructed. They should show the composition of the standard group, the method of selection, and the range of variation. Whether such tables can be expected to fit all parts of the country is doubtful, but if the composition of a standard population is known it becomes possible to correct the tables for local differences.

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SIMPLIFIED MANAGEMENT OF SPACE CLOSURE

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INTRODUCTION

THIS article will deal with a space-closure method for almost any orthodontic condition, whether the space be in an extraction area, in the anterior portion of the mouth, or elsewhere. However, this article will be primarily concerned with the basic problems of premolar extraction cases in which it is necessary to move cuspids distally, rotate them, or do a combination of both. The discussion to follow has essential reference to the edgewise appliance.

By way of introduction, I would mention some of the methods for accomplishing space closure and particularly cuspid retraction, such as sectional arches with Bull loops or other vertical loops, sectional arches activated by coil springs in front of the cuspids, numerous forms of elastic traction from the molar region forward, and the various types of continuous arches which utilize one or more of the foregoing principles.

These methods frequently depend upon the individual operator's preference as well as upon the case at hand, whether it be one requiring the maintenance of utmost anchorage and anchorage preparation or one in which there is excessive space and we actually wish to cause a certain amount of slippage, allowing or encouraging the posterior teeth to move forward as much as or more than the anterior teeth will move backward. We feel that many cases should be treated on a nonextraction basis. Our constant difficulty is with the borderline case in which there is a question of whether the best procedure would be extraction or nonextraction. Furthermore, various operators have varying beliefs regarding force philosophy. Some advocate a strong intermittent force which requires more frequent adjustments, but which also tends to maintain a good arch integrity and possibly better control throughout. Other orthodontists with equal sincerity are strong advocates of light, continuous pressure, believing that it is essential to protect the teeth and surrounding tissues from any but the lightest stress.

It is fairly well agreed that a light, continuous pressure will move the teeth farther more easily and with less damage than any other method, provided that it can be properly controlled. Then, too, patient compatibility, pain, nervousness, general cooperation, and so forth will often dictate the best procedure.

Presented before the Edward H. Angle Society of Orthodontists (Southern California component), Sept. 22, 1958.

Modern advancements in the last few years have given the orthodontist a greater choice among better materials and techniques. Recent advances also in cephalometrics and growth studies are changing concepts and stimulating the development of more efficient procedures.

Anchorage preparation and the amount of it—in other words, how far the teeth may or may not be tipped back and how much Class III mechanics will be used—will depend, as previously mentioned, on a number of things. The operator's concept of a good face—whether he likes it flat or round, protrusive or retrusive—has a considerable bearing on the treatment procedures, whether he decides to extract or not to extract. In his extraction cases, the man who prefers a little more fullness in the lips and in the teeth forward will allow himself more leeway for slippage of the posterior segments during his treatment. It is not my purpose here to discuss what should or should not be done in that regard. We do know that the space must be closed and the teeth uprighted and maintained in an upright position prior to retention, and good retention has meant good treatment.

Good treatment in a busy practice requires the use of simplified procedures wherever possible, provided that they will accomplish the objective. It is quite a temptation to slip by an important step, such as changing from a continuous rectangular arch back to one with vertical loops or other such accessories in order properly to close spaces. The patients in the reception room are still waiting. Dr. Tweed and others have aptly stated that the curse of good orthodontics is too many patients. This is certainly true in the busy practices of today, and it behooves us to streamline our procedures so that they can be adapted with a minimum of wasted time and effort and yet maintain or improve our standards of quality.

As mentioned, there is varied opinion among orthodontists regarding the amount of tipping back of the posterior teeth that is necessary in anchorage preparation before Class II mechanics are begun. It seems to be recognized by most, however, that a definite amount is indicated. Also, it is agreed that anteroposterior leveling and the maintenance of the flattened lower arch during treatment are necessary. In many instances we have frequent changes of arch wires—first, a series of leveling arches, then tip-back arches, then cuspid retraction followed by releveling arches, then space closing generally, and finally ideal arch forms. Often all of this takes place before we can do much about Class II correction.

We have been taught in our earliest orthodontic training that jiggling of teeth back and forth is an important cause of root resorption and bone recession. These frequent arch changes are not particularly helpful in avoiding this. It is sometimes difficult to simulate and coordinate tip-back bends and various torqueing forces with subsequent arches. This incoordination may block or retard some movements that we are most anxious to accomplish. It is logical for us to do whatever we can to move teeth in the three dimensions toward their final proper positions as directly as possible where this can be done. We may cause harmful reciprocal movements in order to gain other correct ones. It

is well to remember the ideal of light, smooth, continuous pressures exerted on all teeth in their relative proper amounts and directions. If anyone requires stimulation in this thought, he needs only to compare his beginning and final intraoral roentgenograms, idiopathic root-end resorption notwithstanding.

Recent advances in techniques and appliances have given us more tools with which to accomplish this smooth directional force. For example, in brackets we have the choice of single, double, Siamese, single lever arm, double lever arm, push-pull, angulated, tipped, etc. Our appliances are constructed of better materials with better temper and hardness or softness, depending upon the requirements. Harder brackets and harder arch wires allow better flow of movement with less frictional binding. These improvements should not only simplify our problems; they should also allow better results in shorter time with less destruction of tissues.

Space-closing procedures have become of more prime concern, especially during the last ten years, in which extraction therapy has become more the rule than the exception. Unquestionably, the edgewise mechanism owes much of its popularity to the fact that with it we can maintain flat arch integrity while we are torqueing, tipping, and bodily moving teeth. We are required to use considerable force in these accomplishments, however, far more than is physiologically ideal at times. An important consideration is reduction of these forces by controlling bracket friction more efficiently. It is suggested that the use of wider brackets, offset and with lighter wires, will help solve some of this problem, but in order to do this in space-closure techniques we must be careful to protect anchorage and maintain a flat curve of Spee. The flat curve is easily lost if excessive retraction force is applied, particularly if it is applied in the wrong direction. The use of vertical loops incorporated in sectional or continuous arches has an important advantage in this respect since, as a space-closing mechanism, it is activated by manually sliding the arch wire's posterior section distally and locking it there. As the stored energy in the loop is expended, the force exerted causes space closure without bracket friction because the wire is not moving through the brackets or the molar tube. Consequently, the force is exerted directly on the teeth or on components of the teeth in an efficient manner. It is my opinion, however, that the usual design of vertical loops incorporated into rectangular arch wires causes considerably more force than is ideal.

Some men are avoiding the use of continuous arches with vertical loops wherever possible, since these vertical loops reduce the anteroposterior rigidity of the arch wire. The squashed Bull loop is popular because it has less of this disadvantage than most other loops, although it exerts a very potent force. Most of us have experimented from time to time with various compression and tension springs, as well as loops, sections, and what-have-you. The following section will contain a description of the use of a simple space-closing tension spring (hereafter referred to as a T-spring) which has proved to be an answer to or at least a way out of some troublesome problems, although, like nearly everything in orthodontics, it is no cure-all. There are several very important advantages, and yet, there are a few disadvantages.

METHOD

This spring (Fig. 1) is simply a 3/16 inch closed coil of 0.009 or 0.011 inch hard round wire turned on a 0.030 inch arbor with two and one-half coils reversed on one end and a straight $2\frac{3}{4}$ inch extension on the other end. The application of the spring is particularly simple. Possibly the most important use of this spring is for space closure throughout either dental arch where continuous rectangular arches are in place. These arches should not be heavier than 0.021 by 0.025 inch.

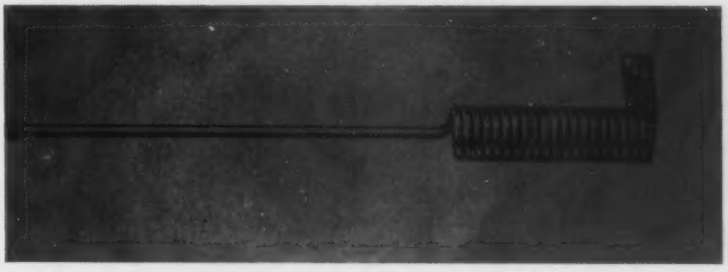


Fig. 1.—An enlarged drawing of the T-spring. It is a 3/16 inch closed coil of 0.009 or 0.011 inch hard round wire turned on a 0.030 inch arbor with two and one-half coils reversed on one end and a straight $2\frac{3}{4}$ inch extension on the other end.

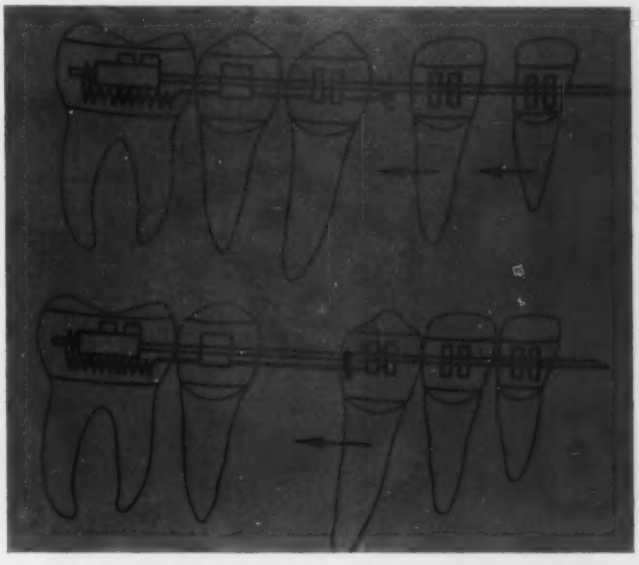


Fig. 2.—A diagrammatic illustration of spring applied for space closure (top) and cuspid retraction (bottom).
It is important to place distal staple ties for prevention of cuspid rotation.

The reversed loop of coil spring is placed over the end of the arch wire distal to the molar tube (Fig. 2). The main body of the spring lies gingival to the molar tube to prevent cheek irritation and for protection from dislodgment or distortion. The forward section of spring wire will now lie directly under the gingival wings of the brackets anterior to the molar tube. For space closure, spring wire is grasped opposite the intermaxillary hook or

suitable stop which is usually placed in front of the cuspids and should be on the gingival side of the arch (although this is not always necessary, particularly on the upper arch). Now the wire is pulled forward to stretch the spring as desired and bent outward and backward around the hook, beginning

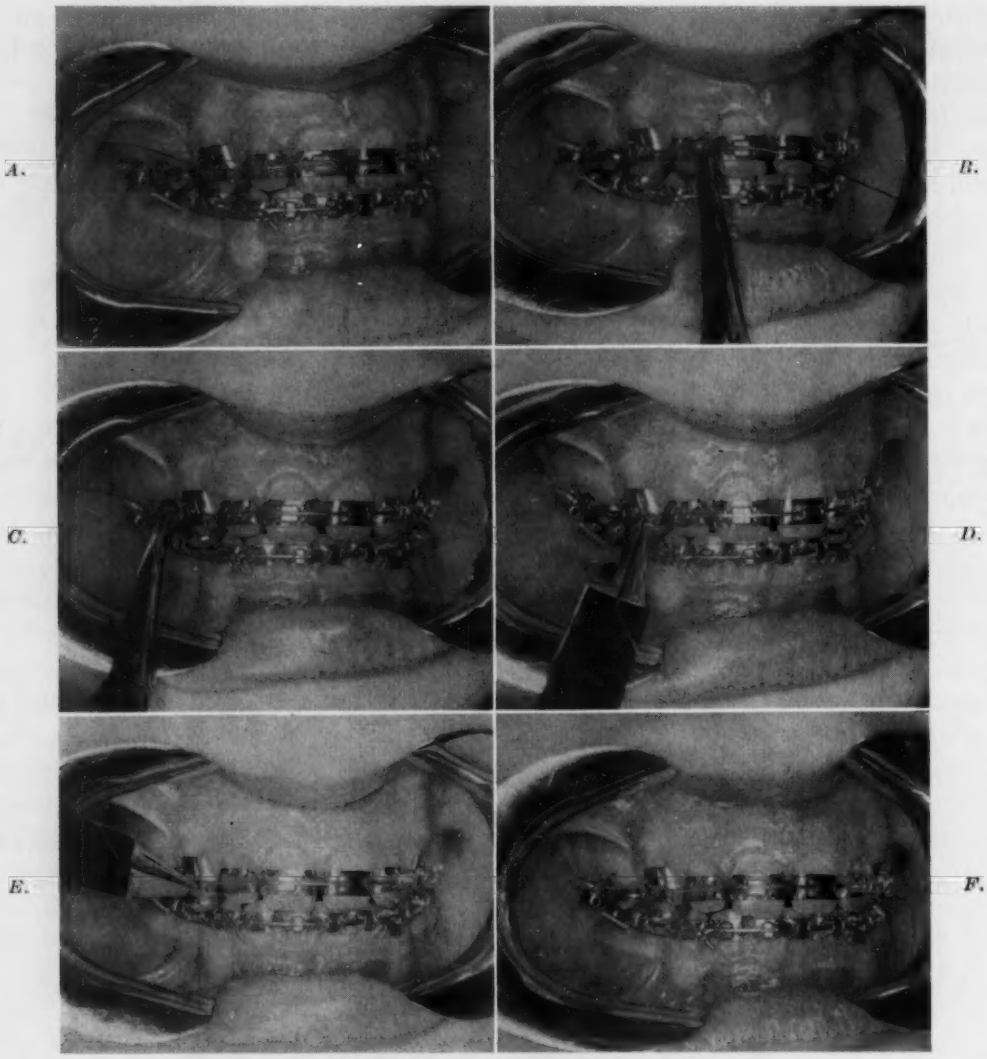


Fig. 3.—*A*, Tension spring in place before activation with anterior end bent laterally; *B*, spring stretched by pulling forward with pliers; *C*, spring bent outward and backward while under tension; *D*, excess cut off ⅛ inch or slightly less past base of hook and bent in with fine-pointed bird-beak pliers; *E*, free end further tucked in and up with bird-beak pliers; *F*, activated upper and lower springs in position.

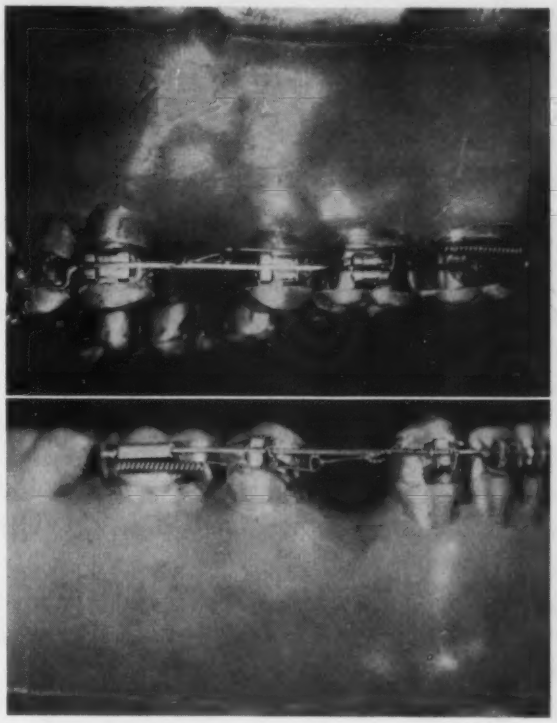
from the under side. The wire is now cut off to leave an excess of about ⅛ inch, which is then bent in further and tucked up with fine-pointed bird-beak pliers. Fig. 3 shows this sequence of procedure.

For subsequent reactivation of the T-spring, the end of the wire bent around the hook may be grasped with serrated No. 110 How pliers or pin

cutters, loosened, pulled forward, and rebent once more around the hook, as done previously. With a little practice, the operator will find it possible to place or activate this spring almost as rapidly as a ligature tie wire. The forward end of the spring may be annealed and wrapped two or three times around the hook to secure it, but the technique described previously has proved much simpler and faster.

Distal movement of cuspids or premolars may be accomplished in several ways. Fig. 2 (bottom) illustrates a simple technique. The arch wire is ligated firmly to the distal staple of the tooth to be moved in order to prevent rotation. The tension spring is placed in the usual manner after its anterior section has been annealed. The annealed end is pulled forward to activate the spring; it is threaded under the gingival wing of the bracket, then over the arch wire, and back under the incisal wing of the bracket. It is bent out and cut off next to the bracket. This spring can be reactivated in a like manner.

A.



B.

Fig. 4.—*A*, Lower cuspid retraction. *B*, Upper cuspid retraction.

If the cuspid has a distal rotation, a ligature may be tied from the distal staple to the arch wire and then directly to a small loop formed in the forward section of a T-spring, as shown in Fig. 4. In the event of severe distally rotated cuspids, the rotation and retraction may be accomplished simultaneously, as shown in Fig. 5, by placing a short section of sliding tube with an intermaxillary

hook on the arch wire between the cuspid bracket and the distal staple tie and then applying the spring, as described above, to the sliding hook. This procedure is particularly effective. The staple on the band should be well to the distal and on its gingival aspect. If the cuspid has considerable mesial inclination, it is recommended that the distal staple tie and sliding hook procedure be used without bracket engagement until the cuspid is upright.

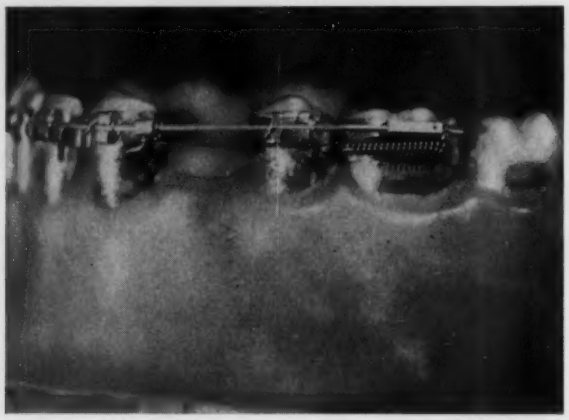


Fig. 5.—Application of spring with short sliding hook for cuspid retraction and rotation simultaneously. Rotating ligature is tied from distal staple to arch wire distal of sliding hook.

PRECAUTIONS

Several precautions are to be observed:

1. The arch wire should be passive, or nearly so, in the buccal sections. Unnecessary torque should be avoided. The springs should not be applied for over-all space closure until the arch can be made to slide rather easily in the buccal sections.

2. If the arch is bent down immediately distal to the molar tube, the reversed loop pressure of the spring will prevent the arch from sliding through the tube further. This may be used as an effective stop if the operator wishes only to move the cuspid distally, but it will completely prevent over-all arch space closure.

3. This spring application with second molars banded may be contraindicated for full arch space closure, due to increased frictional torque or insufficient space below the molar tube.

4. The spring is usually not as effective, at least in the lighter gauge, if precious-metal brackets and arch wires are used, especially single brackets.

5. One should avoid ligating the arch too tightly in the brackets. The arch must be able to slide through the brackets for arch space closure.

6. Good mouth hygiene is essential. It prevents debris, calculus, etc. from forming on the arch wires and brackets and thus aids in maintaining smooth, sliding function.

GENERAL OBSERVATIONS AND CONCLUSIONS

The spring may work a little better when Siamese or wide brackets are used in the posterior sections, particularly if they are tilted or offset on the bands; however, single brackets are quite satisfactory. Offset brackets allow the use of straight arch wires, so that abrupt bends do not interfere with the arch sliding through the brackets. Also, with less arch-wire manipulation, there are fewer nicks and abrasions on the arch wire to slow up its passage through the brackets or molar tube. Furthermore, anterior root torqueing procedures are easier to coordinate.

The spring may be further adapted to speed rotations either mesially or distally. Its action is positive, rapid, and of long duration; consequently, adjustments should be less frequent.

There will be some instances of more than adequate space in the arch as a result of extraction. Here, with proper pressures coordinated, it is possible to retract the upper and lower anterior segments simultaneously and also use Class II mechanics, so that everything is functioning together for the final positioning of all teeth.

In moving single teeth, such as cuspids or premolar, where there is not much bracket friction, it is well to use the lighter-gauge spring; where maximum-size rectangular arches are used throughout, however, the heavier spring will probably be indicated. The 0.009 inch spring will exert a pressure of 6 to 12 ounces. The 0.011 inch spring will exert 16 to 20 ounces. A Bull loop, as usually formed, exerts a pressure of from 20 to 35 ounces.

If, upon application of this spring, the operator does not observe rapid space closure, he may be assured of excessive bracket friction, nicks in the arch wire, bends distal to the molar tube, or various torqueing forces at play within the appliance. For rapid movement, arch wires should be smooth, highly polished, and slightly undersized in the brackets. Anodic polishing and reducing of certain sections of the arch wire will allow more rapid movement in those areas relative to unreduced areas.

It is not my intent or purpose to recommend the T-spring as a panacea for space closure. It has been mentioned repeatedly that bracket and molar tube friction resulting from the various torqueing and binding forces in the arch wire will readily slow or even stop the desired action. However, the spring has proved to be a valuable aid in practical use and experimentation over a three-year period.

SUMMARY

In summary, the following may be considered:

1. The spring is fast and easy to apply.
2. The force may be controlled by the amount of stretching that the operator causes.
3. The application of the spring does not require the removal of the arch wire in any instance.

4. It should allow fewer arch wire changes, since continuous ideal arch wires may be used sooner, provided that they are smooth and do not bind excessively.

5. The spring action is of long duration and does not require frequent adjustments, probably not oftener than four to six weeks.

6. Of prime importance is the fact that the center of thrust of the spring is below or gingival to the center of the arch wire, consequently, with controlled force application it will help reduce overbite conditions and maintain a flat curve of Spee.

REMARKS BEFORE THE BOARD OF DIRECTORS OF THE AMERICAN ASSOCIATION OF ORTHODONTISTS* NEW YORK, NEW YORK APRIL 27, 1958

WILLIAM R. ALSTADT, D.D.S., LITTLE ROCK, ARK.

I AM pleased that Dr. Squires asked me to appear before your Board this morning. I wish that I could stay throughout the entire orthodontic meeting, but I cannot do that. I have to leave this afternoon and go to Detroit to attend the Michigan State Dental Meeting.

Being president of the American Dental Association or being president of the American Association of Orthodontists (as Dr. Squires now is) is a wonderful honor, but you also have many responsibilities. In that capacity you find yourself at times in positions that you do not like. You find yourself many times having to defend your own specialty or the specialties as a group, or sometimes you have to condemn the actions of some specialists.

As a group of dentists who are practicing one of the seven specialties in dentistry, we need to improve public relations much more now than ever in the past. The reason I say that is that there are approximately 1,900 orthodontists among the 3,400 dental specialists in the United States. There are approximately 100,000 dentists, which means that we have one specialist for approximately each thirty dentists. Specialists are going to have to convince our confreres that we are first dentists and then specialists and that we are sincerely interested in them and their problems.

I just want to comment that thus far most specialists have been able to stay out of federal and state governmental negotiations and union welfare plans, but I am not so sure that the orthodontists, the oral surgeons, and some of the others are going to be able to continue staying out much longer. You see, we have educated the public to consider our services as part of the total health picture.

I would like to compliment the American Board of Orthodontics on having the finest record of any of the seven accrediting boards. As president, I requested that a study be made of the activities of all of the seven dental specialty boards during the past five years. In my opinion, something is wrong when any board fails a high percentage of its applicants; either the requirements for

*Dr. William Alstadt, while serving as president of the American Dental Association, was asked to make a few informal remarks before the Board of Directors of the American Association of Orthodontists when it met in New York City in May, 1958. This is a stenographic report of his remarks, which we think will be of interest to the readers of the AMERICAN JOURNAL OF ORTHODONTICS.

taking the board examination are too low and anybody can take it, then the board has to fail everybody, or else it is truly a closed shop. At any rate, something is wrong. The records show that pedodontics failed 48 per cent; periodontics, 45 per cent; oral surgery, 42 per cent; prosthodontics, 37 per cent; dental public health, 29 per cent; oral pathology, 19 per cent; and orthodontics, 12 per cent. The net average is failure of 33 per cent of all of these applicants. I am very proud that orthodontics has the best record.

I hope that we will seriously consider associate membership requirements and be sure that they are realistic and practical. We must consider many factors very seriously.

The two worst problems that orthodontists have today are complacency and the transfer problem. I do not know how we are ever going to work out the transfer problem, gentlemen, but it has to be worked out. Far too many people are complaining, and if we ever have to negotiate with governmental agencies and welfare agencies, which I am afraid we are going to have to do more and more, the penalty to transfer patients will be severe. Those of us who are following this procedure realize that we are not creating good public relations. Particularly, we are hearing repercussions from military personnel who have children under orthodontic treatment.

Dr. Squires, I appreciate your courtesy in inviting me to be present and allowing me to make a few impromptu remarks. As I said, sometimes you have to say things that you do not like to say. It would be a great pleasure if we could just pass out flowers on every occasion, but you cannot always do that and be honest. Basically, I think that the orthodontists are doing a good job. I think that we do a better job than most of the specialists in our participation in dental organizations and in our relations with the general practitioners. We can improve, however, so I urge that in all our contacts, in every way, we seriously consider the public relations aspect of our actions. Our actions are going to be far reaching, much more so than I think many of us realize.

Thanks again for your courtesy; I do appreciate this opportunity to speak to the Board.

610 Boyle Bldg.

Orthodontic Profiles

CLINTON C. HOWARD

THE profile of the late Clinton C. Howard of Atlanta, Georgia, is of interest not only because it recalls many things in connection with his orthodontic activities but also because it reflects the vigorous lifework of a restless spirit and a colorful person in the orthodontic panorama. Much of his work was devoted to trying to find out more about the complex biologic fundamentals of the orthodontic problem. Probably the most outstanding contribution that he made was his correlation of what is commonly referred to in medical literature as the "Howard syndrome." It is interesting, in this connection, to note that Dorland's *American Illustrated Dictionary* (published by W. B. Saunders Company, Philadelphia) defines the word *syndrome* as a "complex of symptoms; a set of symptoms which occur together; the sum total signs of any morbid state." It seems that little was known concerning the relationship of malocclusion to endocrinology before Howard started his work. Perhaps about all that was known was that "flatfeet and malocclusion may have the same etiology in childhood." In so far as it is possible to ascertain, the Howard syndrome is the first well-defined classical physical picture that was recognized within the ranks of the dental profession and quickly taken up and recorded in the literature of scientific medicine as a syndrome of importance.

Dr. Howard was essentially a nonconformist and did not go along with many of the orthodontic teachings of his day. He was one of the first to shake the finger of caution at his own specialty for what he called "an overmechanized perspective of a biological proposition." He contended: "In diagnosis more attention should be directed to the physical condition of the patient than to the plaster casts of the teeth and jaws." Time has revealed that he was right.

In checking back on Dr. Howard's work, it is noted that Dr. J. K. Fancher, medical director of the Good Samaritan Clinic in Atlanta, had this to say in a letter to the editor:

> Dr. Howard was a member of the Staff of the Good Samaritan Clinic for endocrine research for eighteen years. During that time he made various notable contributions of a scientific nature based upon observations made at the Clinic.
>
> We feel that the honor being paid him in having a syndrome named for him is only his just desert for his noteworthy achievements. It is our hope that the trail he has blazed will become a broad highway because of further investigations showing the connection of hormonal action and orthodontic difficulties.
>
> We are proud of Dr. Howard and his work here, and congratulate him.

Let us go back somewhat to a series of circumstances leading up to the syndrome. Very early in his career, Dr. Howard became interested in the study of biology. He felt that in modern education this study in most schools was conducted within the walls of classrooms and upon dead specimens and inert objects. Accordingly, in appraising the traditional orthodontic picture through his own perspective (that is, on observing the plaster cast evidence of the relative position of the maxillary first molar or the orbital plane relationship to the canine eminence), he found that this was inadequate for the problem at hand and that it went only part of the way. He obviously felt that although these inert objects were good yardsticks, or something with which to survey from a given point, nonetheless the physical tie-in was missing. Notwithstanding the very fine and satisfactory strides that had been made in the subject heretofore, he plainly felt that there was still much to be desired. He worked with medical men in the Good Samaritan Clinic in Atlanta, Georgia, where they studied the picture of the whole individual in all physical phases and tried to coordinate the entire physical diagnosis of the whole body. Out of this experience came fifteen papers by Dr. Howard, most of which have been formally recorded in either medical or dental literature. He coined the term *acromegaloid growth,* a term that obviously came about as a result of the observation that there is a classical type of person with an obtuse, bulky mandible—the type well known in the Angle classification as Class III. According to Howard, only a few of these cases are of local origin or are true acromegaly as described and identified years ago by the Frenchman, Marie. Howard reported that there is much more to the over-all Class III picture than the local maxillary and dental concept, and he reported a combination of symptoms common to these cases, of which the bulky mandible is only one of many. Another symptom is early puberty. Also, it was found by checking with thousands of x-ray pictures of the hands that the epiphyses unite with the parent bones at a very early age. Examination of hundreds of clinical records disclosed that the perverted mandibular growth checked side by side with still other symptoms that were too obvious to ignore. Such was the beginning of the story of the Howard syndrome that attracted wide attention in medical circles and in the medical literature.

The story of the typical acromegalics dates back years in scientific literature; however, the acromegaloid growth picture in orthodontics was first correlated by Howard. Out of this came his observation on the subject of orthodontic diagnosis: "The first and most important information necessary for a sensible orthodontic diagnosis is the general visual survey of the child as an entire physical individual." The Howard syndrome, to be more specific, is characterized by certain physical markings: a lower jaw that protrudes, a long obtuse angle formed by the ramus, and a horseshoe body that is decidedly obtuse. The following history, in short, is classical: They say that the patient "was born that way" (inherited hormones) and that gradually the deformity became more manifest. As a rule, morphology is precocious, even in young children. The epiphyses become a unit of their parent bones at an unusually early age. (The buttons and the long bones grow together

years before the average.) The typical person has a high I. Q. Pubic, axillary, and body hair incident to pubescence appear at an early chronologic age. Comment credited to Howard is that mechanical stimulation through orthodontic appliances alone has little permanent and lasting effect in these cases commensurate with the effort expended. He further claimed that the impulse of the hormone is entirely too persistent to be permanently influenced by the impetus of a delicate mechanical device, regardless of the type or design.

CLINTON C. HOWARD

Dr. Howard attended liberal arts college for more than three years and then took his degree in dentistry at the University of Southern California. He attended the Angle School of Orthodontia in New London, Connecticut, in 1911, and as a result of that experience pioneered in the practice of orthodontics as a specialty in the city of Atlanta, where he practiced continuously until his retirement. Throughout this period he could be regarded as an ardent orthodontic enthusiast, but he continuously preached the doctrine that orthodontics must emerge from the "slide rule" stage to the biologic light of day before it might ever hope to enjoy true greatness as a science of attainment.

He served as president of the American Association of Orthodontists and was the first president of the Southern Society of Orthodontists; for many years he was a liberal contributor to the progress of these and other dental societies. He freely admitted that he was an agnostic by instinct and environment, and this may be one reason why he created another chapter of importance in orthodontic progress. In recognition of many contributions, his home district, the Fifth District Dental Society of Atlanta, Georgia, expressed its gratitude by bestowing upon him the first life membership ever presented by that society. In addition, he was presented with a gold membership card engraved with appropriate words of appreciation for his untiring efforts directed to the benefit of dentistry over a period of thiry-one years.

Much mention has been made of the "Howard syndrome" in the medical literature. In fact, the name "Howard syndrome" is better known in the medical literature than any term that ever emerged from the background of orthodontics.

Dr. Howard was born in Selma, Alabama, in 1884. He died following a long illness in a Miami, Florida, hospital, in July, 1955, at the age of 71 years.

H. C. Pollock.

Editorials

MISSOURI DENTAL SERVICE, INC.

ONE inspiration, no doubt, for the increasing interest of organized dentistry in contributing more dental service to the public is the increasing growth of health organizations springing up in organized labor. Another more important reason is the growing trend toward what is known as the "closed panel." The corporation dental health care movement has been growing rapidly. Some corporations have arranged with dentists to handle company cases in the dentists' private offices. Only a few dentists are designated, and this is known as the "closed panel" routine.

According to Ryland M. Ayres, D.D.S., co-chairman of the Committee on Prepaid and Postpaid Dentistry of the Missouri State Dental Association, the first committee to study this situation was appointed in 1955.* The committee plainly wanted to be in a position to discuss group contracts if a demand for such service were made at any time to the Missouri State Dental Association. Studies, particularly those of the West Coast plans, led the committee to the certainty that group dental care is now definitely established in the socio-economic pattern. After reaching that conclusion, the committee then proceeded to recommend the founding of a corporation in order to carry out the proposed recommendations of the committee.

Some time has now elapsed, and early in 1959 (as a result of much diligent work and study) the Missouri committee now comes up with a plan that has aroused the interest of dentists everywhere.

The group dental health idea is moving rapidly; therefore, the AMERICAN JOURNAL OF ORTHODONTICS herewith tries to glean the major points of the plan of the Missouri Dental Service, Inc. Of further interest is the fact that the committee of the Missouri State Dental Association had the full cooperation of the Committee on Dental Health of the A. D. A.

The Missouri committee that has set up this studied plan has created a program that will be watched with careful interest everywhere. The dental profession is now moving rapidly, trying to solve new problems thrust upon it with new velocity, and but few have had time to comprehend the impact. Groups are checking dentistry's service in specialties to ascertain how, and if, it is a practical proposition to include special dental services in the prepaid and postpaid dental service plan now in creation in various quarters.

*_Journal of Missouri State Dental Association_ 38: 6-15, August-September, 1958.

Accordingly, an invitation was extended to all dentists in Missouri to join with the Missouri Dental Service, Inc. The corporation was approved by the Missouri State Dental Association. The highlights of the plan up to now are set forth in a partially quoted letter from W. E. Koch, Jr., President:

This corporation is now chartered under the Laws of Missouri and is ready to negotiate contracts for dental service with reputable organizations which have financial resources and a desire to obtain high quality dental services for their members.

It is not the purpose of the Missouri Dental Service, Inc., to promote or increase the purchase of dental care by groups of people, but instead to safeguard the quality of dental care available to the public and to protect the ethical and scientific principles of the dental profession. The Missouri Dental Service, Inc., was designed to accomplish the following specific objectives:

1. To preserve for the patient the right to select the dentist of his choice rather than to be forced to receive dental service at a closed panel clinic and thereby place himself in the hands of the dentist available at that time.
2. To encourage every patient to go to his own dentist's private office for dental service instead of to a multiple chair clinic. It is neither economical nor desirable for dentists to leave their own office with continuing overhead expense and spend part of their working time in a clinic. Dentistry is a highly personalized service and usually the dentist can work faster and better with his own equipment.
3. To provide the dentist who renders the dental service the opportunity to consult with the patient on the type and extent of the service, rather than to fulfill contracts prescribed by a supervisor or business manager.
4. Inasmuch as there will be many variations in types of restorations and degrees of skill among dentists which affect the expenses of a dentist, the aim of the corporation is to negotiate contracts with organized groups on the basis of a table of allowances, rather than on a basis of fixed fees (whenever possible).
5. To maintain for dentists of the future the ethical and scientific principles of private practice in order that those dentists who develop exceptional skill, operating speed and the ability to attract a larger number of patients may be able to obtain a better standard of living. In contrast, the salaries paid dentists by closed panel clinics seldom reach above a very meager standard.
6. To keep and to promote the respect and esteem in the minds of the public to which ethical members of the dental profession are entitled. This objective cannot be achieved if most dentists are employees in clinics which are controlled by lay groups as might be the case if clinics are established throughout the state such as those now in operation throughout the country, including Missouri.

Experience in the future undoubtly will demonstrate other advantages after the program of the Missouri Dental Service, Inc., comes into full operation. The plan will be as successful as the dentists of Missouri make it.

It is extremely important that the corporation be controlled and managed by a Board of Trustees, but it is also necessary that every participating dentist have the opportunity to attend the annual meetings, to vote in the election of the trustees and to enter into discussions of the plans and policies of the corporation.

It should be clearly understood that each participating dentist may have free choice in accepting patients and to withdraw from participation if he so desires.

The corporation was established for the benefit of the dentists, the Dental Association and the public. It cannot be successful unless a large number of dentists participate.

You can play an important part in this endeavor by helping to facilitate the operation of the Missouri Dental Service, Inc. Please assist your official representatives by filling out and returning the enclosed postal card.

Sincerely,
W. E. Koch, Jr.
President

This is one state's answer to the question of how to meet the challenge of some of the recent health service horizons of dentistry. This is going to be a very interesting experiment, and it will be watched with no small amount of anxiety all over the United States.

H. C. P.

JAMES DAVID McCOY RETIRES

EVEN in California fifty-two years is a long time to practice orthodontics exclusively. Notwithstanding this, the many friends of Dr. James David McCoy will be interested in the news that he is now permanently retired.

During this long period of practice, he also found time to write one of the most profuse and comprehensive contributions to the published record of our specialty. The record reveals 101 papers, fifty of which were published in the AMERICAN JOURNAL OF ORTHODONTICS. Other journals that published his papers were the *Pacific-Dental Gazette,* the *Dental Cosmos,* the *American Orthodontist* and the *Journal of the American Dental Association.* In addition to these, he has written two textbooks: *Dental and Oral Radiography* (three editions) and *Applied Orthodontics* (now in its seventh edition).

As one of the first orthodontists, he helped pioneer orthodontics upon the Pacific Coast. On Feb. 19, 1951, he was tendered a testimonial banquet by the Pacific Coast Society of Orthodontists at the Palace Hotel in San Francisco in recognition of his leadership and his contributions to our specialty. At the testimonial among other interesting things disclosed by the speakers, it was said that the honored guest was for more than thirty years professor of orthodontics at the University of Southern California. He also served as president of the American Association of Orthodontists and the Pacific Coast Society of Orthodontists, and for seven years he was a director of the American Board of Orthodontics. He has been the Pacific Coast editor of the AMERICAN JOURNAL OF ORTHODONTICS for many years and was honored by the University of Southern California in 1936 as the alumnus of the year. In 1952, at a meeting in St. Louis, he received the Albert H. Ketcham Memorial Award.

The retirement of Dr. James David McCoy turns the spotlight on one of orthodontics' great and dedicated careers. He did much to nurture and guide a struggling new specialty of dentistry from infancy to its present state of vigor and stability.

The AMERICAN JOURNAL OF ORTHODONTICS, its editors, and publishers feel sure that our colleagues everywhere will join in extending congratulations and thanks to one of the important pioneers of our specialty in America.

It is hoped that in his retirement he will find life just as challenging as it was while he was in active practice. It is further hoped that Dr. McCoy will never lose his absorption and dedication to the specialty he loves so well.

Reports

REPORT OF EDUCATION COMMITTEE, AMERICAN ASSOCIATION OF ORTHODONTISTS, 1958

THIS year the Committee has continued the plan established last year under Dr. Tarpley's chairmanship.

1. A survey was made in conjunction with the Council on Dental Education of the graduate and postgraduate (long-term) orthodontic training programs in this country. The results of that survey are attached (Tables I to VIII).

2. This year a similar survey of undergraduate orthodontic programs was made. The results of that survey are attached to this report.

3. It is proposed that this committee shall undertake next year to determine all the short courses in orthodontics offered to the profession. Such a list, giving sponsor, time, location, content, eligibility, and tuition, would be of use both to this Association and to the Council on Dental Education.

4. The meeting at New Orleans last year made evident to this Committee the intensity of feelings which individual members of the Association hold

TABLE I. SURVEY OF GRADUATE ORTHODONTIC PROGRAMS
STAFF

SCHOOL	ORTHODONTISTS ON STAFF				STAFF MEMBERS NOT ORTHODONTISTS			
	TOTAL	FULL-TIME	PART-TIME	FULL-TIME EQUIVALENT	TOTAL	FULL-TIME	PART-TIME	FULL-TIME EQUIVALENT
Alabama	5	1	4	3	0	0	0	0
Illinois	6	0	6	2.6	0	0	0	0
Loyola (Chicago)	2	0	2	1	4	2	4	3
Northwestern	14	0	14	2	0	0	0	0
Indiana	5	1	4	2.2	0	0	0	0
Iowa	3	2	1	2.2	0	0	0	0
Tufts	6	0	6	3	12		Varies	
Michigan	14	3	11	4.5	2	0	2	0.6
Minnesota	3	1	2	1.5	0	0	0	0
St. Louis	11	0	11	4	3	1	2	1.5
Washington (St. Louis)	8	0	8	2.5	1	0	1	0.16
Kansas City	6	1	5	3	6	1	5	3
Nebraska	3	0	3	1	0	0	0	0
Eastman	5	1	4	2	0	0	0	0
North Carolina	5	3	2	3	0	0	0	0
Ohio	5	0	5	2	3	0	0	0
Pennsylvania	6	0	6	N.A.	N.A.			
Pittsburgh	4	1	3	2	4	N.A.	N.A.	N.A.
Washington (Seattle)	9	1	8	2.1	0	0	0	0

N.A. = Not answered.

TABLE II. SURVEY OF GRADUATE ORTHODONTIC PROGRAMS

PROGRAM

SCHOOL	REGISTERED WITH GRADUATE DEPARTMENT			ADMISSION REQUIREMENTS		POTENTIAL ENROLLMENT	NUMBER OF STUDENTS ENROLLED	LENGTH OF PROGRAM	DEGREE
	YES OR NO	ENTIRE COURSE (YES OR NO)	IF NOT, WHEN	REGULAR GRADUATE REQUIREMENTS	BACHELOR'S DEGREE				
Alabama	Yes	No	After 1st semester	Yes	No	4	2	6 sem.	M.S.
Illinois	Yes	No	4th qtr.	Yes	Yes	10	9	3 qtr.	M.S.
Loyola (Chicago)	Yes	Yes	—	Yes	No	4	4	2 yr.	M.S.
Northwestern	Yes	Yes	—	Yes	No	12	12	5 qtr.	M.S.D., M.S., Ph.D.
Indiana	Yes	Yes	—	Yes	No	4	4	4 sem.	M.S.D., M.S.
Iowa	Yes	Yes	—	Yes	No	6	2	3½ sem.	M.S.
Tufts	Yes	No	Working for degree	Yes	For M.S.	10	10	3 sem.	M.S., M.S.D.
Michigan	Yes	Yes	—	Yes	No	15	15	21 mo.	M.S.
Minnesota	Yes	Yes	—	Yes	No	12	8	8 qtr.	M.S.D.
St. Louis	Yes	Yes	—	Yes	No	12	11	4 sem. & 2 summers	M.S.
Washington (St. Louis)	No	—	—	Yes	No	6	5	6 qtr.	M.S.
Kansas City	N.A.	N.A.	N.A.	N.A.	No	11	11	4 sem.	M.S.
Nebraska	Yes	Yes	—	Yes	No	3+	3	3 sem. & 1 summer	M.S.D.
Eastman	Yes	Yes	—	Yes	Preferred	5	5	4½ sem.	M.S.
North Carolina	Yes	Yes	—	Yes	No	5	5	4 sem.	M.S.
Ohio	Yes	No	After 2 qtr. postgrad.	Yes	No	15	15	6 qtr.	M.S.
Pennsylvania	Grad. Sch. of Med.	Yes	—	Yes	No	10	10	16 mo.	M.Sc.(Dent.) D.Sc.(Dent.)
Pittsburgh	Yes	Yes	—	Yes	Yes	10-12	10	2 yr.	M.S.
Washington (Seattle)	Yes	Yes	—	Yes	No	10	10	6 qtr.	M.S.

N.A. = Not answered.

TABLE III. SURVEY OF GRADUATE ORTHODONTIC PROGRAMS

CLINICAL ORTHODONTIC PRACTICE

SCHOOL	EXPERIENCE						TECHNIQUE (PER CENT)				
	1ST YEAR		2ND YEAR		3RD YEAR		EDGE-WISE	UNIVER-SAL	TWIN WIRE	LABIO-LINGUAL	REMOVABLE
	HOURS	PATIENTS	HOURS	PATIENTS	HOURS	PA-TIENTS					
Alabama	560	25	784	45	784	60	10	0	20	45-50	Crozat 20 Andresen 0-2 Headgear 0-3
Illinois	—	—	4th, 5th, 6th qtr.	21	—	—	90	0	0	0	Headcap 10
Loyola (Chicago)	N.A.						N.A.				
Northwestern	660	30	440	30	—	—	50	0	0	35	McCoy 15
Indiana	15 hr. week	15 week	20 hr.	15	—	—	98	0	0	0	Misc. 2
Iowa	500	40	260	40	—	—	60	3	35	0	Andresen 2
Tufts	600	10	700	12-18	—	—	Chiefly	0	Lab. only	Occasion-ally	Headgear
Michigan	304	8	576	17	—	—	40	0	20	0	Misc. 20 Headcap / Andresen } 20
Minnesota	363	7	484	7	—	—	86	0	0	14	0
St. Louis	4 hr./day	15	4 hr./day	20	—	—	100	0	Covered in lectures		
Washington (St. Louis)	—	—	—	—	—	—		70	(twin wire & labiolingual)		Crozat 5 Multiband 25
Kansas City	1281 clock	12	1105 clock	18	—	—	Multiphase (utilizes all techniques)				
Nebraska	1000	20-22	680	20-27	—	—	85	0	5	5	Acrylics 5
Eastman	400	25	400	25	—	—	95	0	0	5	0
North Carolina	N.A.	40	N.A.	40	—	—	40	0	35	25	Plates of various types
Ohio	800	25	varies		—	—	47	0	12	41	0
Pennsylvania	(1st half) 600	20	(2nd half) 990	30	—	—	30	0	34	34	Crozat 2
Pittsburgh	420	10-12	560	25	—	—	25	0	45	30	0
Washington (Seattle)	411	7	639	12-15	—	—	100	0	0	0	Bite plates, lingual arch, heavy labial arches used as auxiliaries

N.A. = Not answered.

TABLE IV. SURVEY OF GRADUATE ORTHODONTIC PROGRAMS

RESEARCH

SCHOOL	RESEARCH REQUIRED?	AREAS	RESEARCH TIME	FACULTY RESEARCH	TUITION PER YEAR
Alabama	Yes	Clinical orthodontics or related basic or allied sciences	¼ 2nd and 3rd years	Yes	$1,000.00
Illinois	Yes	Any area in orthodontics or basic sciences	½ 2nd year	Yes	50.00 (resident) 167.00 (nonresident) per qtr.
Loyola (Chicago)	N.A.				
Northwestern	Yes	Basic science, cephalometrics, orthodontics	150 hours	Yes	675.00
Indiana	Yes	Cephalometrics, dental materials, other areas approved by graduate committee	80 plus clock hours	Yes	256.00 (resident) 380.00 (nonresident)
Tufts	Yes	Any of interest to orthodontics	18 mo., 3 hr./week	Yes	1,000.00
Michigan	Yes	Any related field	2 sem. hr. credit	Yes	220.00 (resident) 385.00 (nonresident) per semester
Minnesota	Yes	Any related to major or minor	500 hr. (est.)	Yes	300.00 (resident) 630.00 (nonresident)
St. Louis	Yes	Any related field	N.A.	Yes	20.00 per acad. hr., 30 hr. minimum
Washington (St. Louis)	Yes	Any related field	Not specified	Yes	750.00
Kansas City	Yes	Any approved by department head	8 sem. hr., 128 clock hr.	Yes	400.00
Nebraska	Yes	Cephalimetrics, growth, physiology, speech pathology, anatomy	6-10 curriculum hours	Yes	120.00 (resident) 240.00 (nonresident) per semester
Eastman	Yes	Growth and development, histology, physiology, and anatomy	20 hours	Yes	250.00
North Carolina	Yes	Any related field	200	Yes	900.00 (resident) 1,800.00 (nonresident) 16 months
Ohio	Yes	N.A.	N.A.	Yes	525.00 (resident) 930.00 (nonresident)
Pennsylvania	Yes	Growth and development, diagnosis	N.A.	Yes	1,550.00 (course)
Pittsburgh	Yes	Any related field	6-8 credits	Yes	900.00 (course)
Washington (Seattle)	Yes	Any basic science or dental field	264 plus	Yes	300.00 (resident) 495.00 (nonresident)

N.A. = Not answered.

TABLE V. SURVEY OF POSTGRADUATE ORTHODONTIC PROGRAMS
STAFF

SCHOOL	ORTHODONTISTS ON STAFF				STAFF MEMBERS NOT ORTHODONTISTS			
	TOTAL	FULL-TIME	PART-TIME	FULL-TIME EQUIVALENT	TOTAL	FULL-TIME	PART-TIME	FULL-TIME EQUIVALENT
Alabama	5	1	4	3	0	0	0	0
Emory	Partial reply							
Illinois	6	0	6	2.6	0	0	0	0
Tufts	6	0	6	3	12		Varies	
Columbia	10	1	9	5	1	1	0	1
New York	41	1	40		0	0	0	0
Buffalo	6	0	6	1	1	1	6	2
Ohio	5	0	5	2	0	0	0	0
Washington (Seattle)	9	1	8	2.1	0	0	0	0
Iowa	3	2	1	2.2	0	0	0	0
Texas	3							
Harvard	3	—	3	1	3	0	2	N.A.

N.A. = Not answered.

with regard to education for orthodontic practice. It was felt that the Education Committee could take a leading role in studying this problem so that all the facts pertaining to the training of specialists in orthodontics might be better understood by members of the association.

The W. K. Kellogg Foundation Institute of the University of Michigan is sponsoring a Workshop in Orthodontics to be held June 15 to 21, 1958. Several of the study groups of that workshop pertain directly to the task of this Committee. An outline of the workshop is attached to this report (Table IX). The Education Committee has served in an advisory way to see that Study Group I *(Educating the Undergraduate in Orthodontics)* and Study Group II *(Education for Specialization in Orthodontics)* were planned to best serve this Association. For example, Study Group II will spend the week studying current graduate, long-term postgraduate, and preceptorship programs. Members of the Association will take leading roles in these discussions. For example, Stephen Hopkins will read a paper entitled "The Goals

TABLE VI. SURVEY OF POSTGRADUATE ORTHODONTIC PROGRAMS
PROGRAM

SCHOOL	POTENTIAL ENROLLMENT	PRESENT ENROLLMENT	LENGTH OF PROGRAM	CERTIFICATE
Alabama	4	3	4 semesters	Yes
Emory	4			Yes
Illinois	10	10	3 quarters	Yes
Tufts	10	10	3 semesters	Yes
Columbia	22	22	3 semesters	Yes
			16 months	
New York	88	70	4 years	Yes
Buffalo	10	5	3 semesters	Yes
Ohio	15	15	6 quarters	Yes
Washington (Seattle)	10 (grad. and postgrad.)	N.A.	6 quarters	Yes
Iowa	6 (grad. and postgrad.)	1	3½ semesters	Yes
Texas		2	24 months	Yes
Harvard	6	3	3 years	

N.A. = Not answered.

TABLE VII. SURVEY OF POSTGRADUATE ORTHODONTIC PROGRAMS

CLINICAL EXPERIENCE

SCHOOL	PRACTICE								TECHNIC (PER CENT)				
	1ST YEAR		2ND YEAR		3RD YEAR		4TH YEAR						
	HOURS	PATIENTS	HOURS	PATIENTS	HOURS	PATIENTS	HOURS	PATIENTS	EDGEWISE	UNIVERSAL	TWIN WIRE	LABIOLINGUAL	REMOVABLE
Alabama	560	25	784	45	—	—	—	—	10	0	20	25	Crozat 20 Andresen 0-2 Headgear 0-3
Emory	N.A.												
Illinois	276	6	198	6	—	—	—	—	90				Headcap 10
Tufts	600	12-15	700	12-18	—	—	—	—	Chiefly	0	Lab.	Occasionally	Headgear
Columbia	480	17	480	18	—	—	—	—	25	0	25	25	Removable 5 Extraoral force 20
New York	210	12	288	18	288	20	288	12	0	0	0	0	Simple heavy labial arch wire and bite plates 100
Buffalo	74 wk. 1702 hr.	35-40	—	—	—	—	—	—	20	0	40	40	0
Ohio	847	25	825	25	—	—	—	—	47	0	12	41	0
Washington (Seattle)	411	7	639	12-15					100				
Iowa	500	40	260	40	—	—	—	—	60	3	35	0	Andresen 2
Texas	N.A.												
Harvard	30%	20-30	40%	20-30	30-60%	20-30	—	—	0	0	60	20	Crozat 20

N.A. = Not answered.

TABLE VIII. SURVEY OF POSTGRADUATE ORTHODONTIC PROGRAMS

RESEARCH

SCHOOL	REQUIRED	AREAS	TIME ALLOTTED	FACULTY RESEARCH	TUITION PER YEAR
Alabama	No	—	—	Yes	$1,000.00
Emory	N.A.				
Illinois	No				50.00 (resident) 167.00 (nonresident) per qtr.
Tufts	Yes	Any subject of interest to orthodontics	16 mo. 3 hr. per week	Yes	1,000.00
Kansas City	N.A.				
Columbia	Yes	Unlimited	400	Yes	600.00
New York	Yes	Cephalometric research Habit control Growth and development } required	288	Yes	1,210.00
Buffalo	No	Any related subject	No definite	No	425.00 per semester
Ohio	No			Yes	501.00
Washington (Seattle)	No	N.A.	N.A.	Yes	300.00 (resident) 495.00 (nonresident)
Iowa	Yes (term paper)	Any related area	None allotted	Yes	256.00 (resident) 380.00 (nonresident)
Texas	N.A.				
Harvard	Yes	Basic sciences, clinical research	50%	Yes	None

N.A. = Not answered.

TABLE IX. OUTLINE OF MICHIGAN WORKSHOP IN ORTHODONTICS

Purpose and Plan of the Workshop

The W. K. Kellogg Foundation Institute: Graduate and Postgraduate Dentistry presents each year a variety of courses in continuing professional education for dentists and dental hygienists. These courses have included one-day-a-week, one-week, two-week, and extension programs, sponsorship of academy and seminar meetings, workshops, full-time postgraduate programs, and full-time graduate programs in eighteen fields.

This workshop in orthodontics will attempt to appraise critically the role of orthodontics as a dental health service. The workshop technique will be used to bring leaders in dentistry face to face with current problems in orthodontics: education, research, practice, etc.

Specially prepared critical lectures will be presented in the mornings by outstanding men in this and related fields. The afternoon sessions will be devoted to small-group discussions, evaluation of material presented by the morning lecturers, and careful review of library information. It is expected that by the end of the week each study group will have achieved a set of conclusions which will summarize the available knowledge and present problems in the area assigned.

These conclusions will be presented by the moderators of the seven study groups to the entire workshop on Saturday morning.

Study Groups

I. "Educating the Undergraduate in Orthodontics" (Harold Noyes, Moderator)

General Considerations:

1. Should orthodontics be taught on the undergraduate level?
2. Responsibility of general dentist for developmental problems.
3. Relationship and responsibility of orthodontist in general dental considerations.
4. Allocation of time and position of orthodontic training in general undergraduate program.

Specific Considerations:

1. Aim and objectives of orthodontic instruction.
2. Subject matter in general.
3. Outline of course.
4. Lecture outlines.
5. Laboratory requirements.
6. Clinic requirements.
7. Supplementary study group and seminar needs.
8. Correlation and timing of instruction.
9. Assessment of accomplishment.

II. "Educating the Specialist in Orthodontics" (Faustin Weber, moderator)

This study group has as its primary function three areas: (1) graduate and long-term postgraduate courses, (2) preceptorships, and (3) short courses. In each instance study should be made of the content, purpose, instructions, sponsoring institution, etc. Study should be given, too, to the availability, number, and need of such courses as well as the number of aspirants. The study group may be forced to discuss such matters as geographic distribution of training facilities, ways of evaluating and certifying courses, cost, and possible methods of increasing the number of opportunities for training.

III. "The General Practitioner and Orthodontics" (Kenneth Easlick, moderator)

The aim of the study group on orthodontic education of the dental practitioner is to determine the means of communication between the orthodontist and the practicing dentist. The areas which would seem necessary to investigate are (1) literature, (2) dental society meetings, (3) television or telephone programs, (4) short courses, either university or individual, and (5) study clubs.

IV. "Research" (Wendell Wylie, moderator)

The reesarch-evaluating study group has as its aim the collation of current research and future trends in orthodontic records. It would appear that some of the problems which need investigation are (1) a classification of facial morphology, (2) the prediction of growth patterns, (3) orthodontic materials, (4) histologic studies of tooth movement, (5) research into clinical procedures, (6) the physiology of the oral cavity, and (7) the inheritance of malocclusion. This study group may discuss also the training of personnel for research and methods of financing orthodontic research.

(Continued on next page.)

TABLE IX—Cont'd

V. "Meeting the Demand for Orthodontic Services" (J. A. Salzmann, moderator)

The demand for orthodontic services is becoming greater than the profession's ability to meet the public's wishes. Study Group V should study such problems as (1) the epidemiology of malocclusion, (2) use of auxiliary personnel to increase number of patients, (3) value of interception and early treatment necessary, (4) methods of stimulating other dentists to carry out their prophylactic orthodontic responsibilities, (5) time analyses of various methods of treatment, (6) the all-or-none attitude toward treatment, (7) social and public health orthodontics, (8) the geographic distribution of orthodontists, and (9) the demand for orthodontic services versus the epidemiology of malocclusion.

VI. "Relationship of Orthodontics to Other Health Services" (Maynard Hine, moderator)

Because there is a flow of patients and responsibilities among all fields of health service, this study group should examine in detail the role of orthodontics in such problems as (1) cleft palate rehabilitation, (2) orthodontic-pedodontic relations, (3) orthodontic-oral surgery relations, (4) orthodontic-medical relations, (5) orthodontic-periodontic relations, (6) orthodontic-general practitioner relations, and (7) the orthodontist as a member of an institutional staff.

VII. "Practice Management" (C. Edward Martinek, moderator)

The objective of the study group is to consider practice management that will be beneficial to the orthodontist, his profession, his patients, and the public. This group will endeavor to delineate some of the basic problems relative to developing a new practice in orthodontics and to proper management of an existing one.

Consultants and Readers of Formal Papers

Edward Cheney	Stephen Hopkins	Jack Pelton
Alton Moore	P. G. Anderson	L. B. Higley
Shailer Peterson	Joe Peak	Sam Pruzansky
Frank Bowyer	Ernest Hixon	Ralph Campbell
Lowrie Porter	Frank Popovich	Mel Cohen
Tom Graber	Robert Grainger	

COUNCIL ON DENTAL EDUCATION, AMERICAN DENTAL ASSOCIATION
SURVEY OF UNDERGRADUATE ORTHODONTICS

Summary of Responses

1. *Aims of Undergraduate Orthodontic Instruction*

Is the undergraduate instruction in orthodontics

a. ____ under the administration and supervision of a Department of Orthodontics of the dental school?

b. ____ provided as a part of the instruction offered by one or more other departments of the dental school?

37 schools checked *a*
3 schools checked *b*
3 schools checked both
43 total replies

Irrespective of how the undergraduate instruction in orthodontics is supervised, check any of the following which are regarded as basic objectives for undergraduate orthodontic instruction in your school:

The numbers of schools which checked each item are indicated to the left.

43 a. Learn the fundamentals of craniofacial growth.
43 b. Learn the fundamentals of the development of occlusion.
32 c. Learn the preparation of casts and the construction of some orthodontic appliances.
41 d. Learn discrimination in the selection of malocclusions for interceptive (guiding or preventive) treatment.
42 e. Learn about interceptive technics.

30 f. Gain clinical experience in interceptive orthodontics.
27 g. Learn about corrective (as differentiated from interceptive, guiding or preventive) orthodontics.
15 h. Gain some clinical experience in corrective orthodontics.
17 i. Other.

2. *Lectures*

a. Number of hours of lectures	Number of schools having lectures	Average No. of hours
Freshman	6	11
Sophomore	20	22
Junior	34	27
Senior	31	21
Total	42	49

b. What are the principal subjects discussed in each year?

(*Comment by Committee Chairman:* A wide variety of subjects are discussed under the guise of undergraduate orthodontics. The teachers, in answering this question, provide many pages of comments about each school's individual program.)

3. *Laboratory*

a. Number of hours of orthodontic laboratory instruction for each student	Number of schools having laboratory	Average No. of hours
Freshman	4	21
Sophomore	15	36
Junior	18	49
Senior	2	19
Total	31	50

b. What technics are taught?

(*Comment by Committee Chairman:* Most schools confine their technics to appliances used in interceptive orthodontics.)

c. Which of the preceding technics are students required to do?
(*Comment by Committee Chairman:* Almost all schools require the students to construct the appliances which have been taught.)

4. *Clinic*

a. Total number of hours of orthodontic clinical experience for each student	Number of schools having clinical experience	Average No. of hours
Freshman	1	3
Sophomore	3	7
Junior	11	28
Senior	19	31
Total	19	48

b. Number of hours of clinical orthodontic demonstrations for each student	Number of schools having demonstrations	Average No. of hours
Freshman	1	1
Sophomore	5	3
Junior	14	12
Senior	18	15
Total	21	21

c. Number of hours spent by each student managing his own orthodontic patients	Number of schools having student manage own patients	Average No. of hours
Freshman	0	0
Sophomore	0	0
Junior	5	34
Senior	10	33
Total	10	50

d. Average number of patients per student	Number of schools reporting	Average No. of patients
For study and observation	20	10
For treatment	12	2

5. *Evaluation of the Undergraduate Orthodontic Program*

a. How well do you think your school is meeting the aims and objectives listed in (1) above?

Very well _____ .
Satisfactory in some areas only _____ .
Poorly _____ .

25 schools checked very well
15 schools, satisfactory in some areas only
0 schools checked poorly
3 did not answer
43 total replies

b. What are the chief obstacles to meeting your own aims and objectives in undergraduate orthodontics?

(*Comment by Committee Chairman:* The greatest obstacle to achieving the aims desired by the orthodontic staff is that of insufficient time in the undergraduate program. Other items mentioned frequently were clinical facilities, money, and the need for full-time teachers of orthodontics.)

c. Are any orthodontic matters taught in other departments? If so, what and where?
(*Comment by Committee Chairman:* In many schools space maintenance is taught in the Pedodontic Department. In several others some tooth movement procedures are taught by the Periodontic and Crown and Bridge Departments.)

d. Do you use a textbook _____ or printed notes _____ other _____ ?

29 schools indicated that they use a textbook
23 schools indicated printed or mimeographed notes
6 schools indicated other devices including visual aids and journal articles

e. Other remarks and comments that you feel are pertinent.

of Preceptorship in Orthodontics," and T. M. Graber will read a paper entitled "The Goals of Graduate Education in Orthodontics." This study group will attempt to outline an ideal graduate program and a model preceptorship program. Invitations have been extended to all the schools and to the admissions committee members of each component society, since they are most interested in this matter. The Education Committee feels that careful study of all aspects of the problem by members of the Association is likely to be more fruitful than further such unfortunate experiences as last year.

5. The Education Committee has selected the leaders for Study Groups I and II to ensure that the several viewpoints are well represented. We propose to pay the expenses of the leaders of these two study groups from our budget and ask that sufficient funds be set aside next year for that purpose. We have purposely not spent money this year in order that a like amount might be available next year.

6. Several dental schools are starting graduate training programs in orthodontics. We propose to place the Education Committee at the service of any school who might desire liaison with the Association. After the results of the workshop are published, it is hoped that even more schools will undertake to begin graduate training programs.

Respectfully submitted,

Boyd Tarpley
Ed. Forrest
Robert E. Moyers, Chairman.

REPORT OF INTERRELATIONS COMMITTEE, AMERICAN ASSOCIATION OF ORTHODONTISTS, 1957-1958

FOUR applications for affiliated membership were received and considered by the Interrelations Committee this past year.

The applications of Drs. J. Oscar Leiva of Guatemala and Arturo H. Koenig of Peru have been approved by the Committee. Their favorable consideration by the Board of Directors and election by the Association is recommended.

The application of Dr. Paul H. Demoge of France was favorably passed on by the Committee. At the time of application, however, Dr. Demoge was not a member of the orthodontic society in France; hence, his application has been held up. He has been advised by our secretary, Dr. Shepard, that it will be considered again as soon as he becomes a member of the Société d'Orthopedie Dento-Faciale.

The application of Dr. Rafael H. Hernandez of the Dominican Republic has been held up as there is no orthodontic society in his country and he has not attended an annual session of our Association. As soon as he meets the by-laws requirement in this regard, his application can be considered by the Committee.

The Committee held a meeting during the last annual session of the American Association of Orthodontists in New Orleans. After some discussion, it was felt that the A.A.O. should make certain that there is a strong contribution from our membership to the program of the Fédération Dentaire Internationale meeting in 1959 and that the A.A.O. should make necessary arrangements and participate in the organization of the program.

The chairman wishes to thank Drs. Stephen C. Hopkins and Robert H. W. Strang, members of the Committee, for their kind and helpful cooperation.

Respectfully submitted,

GERALD FRANKLIN, Chairman
Interrelations Committee.

ANNUAL REPORT OF MILITARY AFFAIRS COMMITTEE, AMERICAN ASSOCIATION OF ORTHODONTISTS, 1958

THE Military Affairs Committee of the American Association of Orthodontists is pleased to present a most encouraging report relative to the liability of the Association's membership to military service. At this time the chances are extremely remote that any member will be required to leave his practice to serve in the Armed Forces.

Under the old "doctor-draft" law, which has been maintained in effect for some few years, dentists and physicians up to the age of 46 were subject to the draft. Shortly before the scheduled expiration of this law on June 30, 1957, a new dentist-physician draft bill was passed by Congress and sent to the White House, where it was signed into law. The new provisions permit the induction of only those physicians and dentists who would be subject to service under the regular draft law.

This means, to all practical purposes, that the dental graduate still becomes liable for service immediately upon emergence from dental school, provided that he has not served prior to his professional training. As previously reported by this Committee, the Selective Service officials have, for the past two years, estimated the annual number of dental graduates to be adequate to meet all current requirements of the Armed Forces. In view of the recent and radical reduction in personnel numbers in all the services, coupled with the elimination of dental care for military dependents, the new dental graduate group has proved more than ample for the replacement of dental officers being discharged. In actuality, the supply was so much greater than the reduced demand that during the past year no dentists in the upper age groups were called to duty, even though they were still liable for service under the law. Hence, it was only logical that this law, which had always been a controversial one, should be altered to conform to the existing situation.

In so far as the members of this Association are concerned, our present eligibility requirements are such that by the time any orthodontist could enter the Association he either would have already served his time in the Armed Forces or would be beyond the age limit provided by the draft law. The Military Affairs Committee, therefore, avers that, barring hostilities or a similar national emergency, the membership of the Association should have no need for apprehension over the possibility of being drawn into military service at any time in the foreseeable future.

Respectfully submitted,
H. K. Terry
William A. Flesher
Paul V. Reid
Hugh A. Simms
D. Robert Swinehart, Chairman.

ANNUAL REPORT OF NECROLOGY COMMITTEE, AMERICAN ASSOCIATION OF ORTHODONTISTS

THE following is the report of the 1958 Necrology Committee as of March 10, 1958.

During the early months following the 1957 session, secretaries of the constituent societies were asked by members of our committee to notify them or the chairman of the passing of any of our members. Obituaries or resolutions, and especially the exact dates of birth and death, were requested.

In addition, Editor Pollock very kindly inserted a similar notice in our Journal.

Incomplete data regarding birth and death necessitated extra correspondence in order to obtain the information for this report. To date, the following names have been received and the dates of demise noted:

Harry Elias Abelson------March 11, 1957
Berneice L. Barkelew Ward----------Nov. 15, 1957
E. Santley Butler--Jan. 20, 1958
William R. Dinham--July 6, 1957
John T. Flemming--Nov. 27, 1957
Abraham Hoffman--Feb. 23, 1958

Eugene J. Kelly---Aug. 10, 1957	Thomas D. Speidel-Nov. 30, 1957
Stephen G. Lee, Jr.--May 8, 1957	J. Mark Trach-----Apr. 20, 1957
Clayton M. McCauley-May 7, 1957	Orville Van Deusen-Aug. 17, 1957
Walter C. Miner---Aug. 27, 1957	Ralph Waldron----July 24, 1957
Paul A. Simon------Oct. 19, 1957	Eugene Wuerpel---Feb. 24, 1958

So far we have been unable to obtain even the complete date of birth or death of some of our deceased members, let alone obituaries, but we hope to have complete information by the time our full report is presented to the membership.

It was the concensus of the Board of Directors at the 1957 session that the booklet regarding the estate of the orthodontist should be reprinted, with additions as discussed by the Board.

With these and other suggestions by Committee members, the revised copy was sent Feb. 25, 1958, to Secretary Earl E. Shepard, who planned to have it printed and mailed to members, together with the 1958 program.

Respectfully submitted,

NECROLOGY COMMITTEE
WILLIAM S. SMITH
WILBUR J. PREZZANO
ERNIE BACH, Chairman

REPORT OF NOMENCLATURE COMMITTEE, AMERICAN ASSOCIATION OF ORTHODONTISTS, 1958

IN KEEPING with the policy established several years ago, our Nomenclature Committee has been working in conjunction with the Bureau of Library and Indexing Service of the American Dental Association, in the hope that the matter of terms and nomenclature might be integrated with that of dentistry as a whole. One member of our Committee, Dr. B. F. Dewel, who is located in Evanston, has held himself in readiness to attend any meeting of the Bureau of Library and Indexing Service, but during the past year no such meeting has been held.

He shall continue to be available for any conference which the Bureau shall designate. In the meantime, we feel that better nomenclature has been encouraged through the skillful editorship of the *Journal of the American Dental Association* and also of the AMERICAN JOURNAL OF ORTHODONTICS, where the terms applying to dentistry as a whole and also to orthodontics have been carefully used.

Unless the Board of Directors should order otherwise, the policy of the Nomenclature Committee that has been carried out for the past several years will be continued.

Fraternally yours,

The Nomenclature Committee,
B. F. DEWEL
C. F. STENSON DILLON
JAMES D. MCCOY, Chairman.

Department of Orthodontic Abstracts and Reviews

Edited by
DR. J. A. SALZMANN, NEW YORK CITY

All communications concerning further information about abstracted material and the acceptance of articles or books for consideration in this department should be addressed to Dr. J. A. Salzmann, 654 Madison Avenue, New York City.

A Profile-Roentgenologic Study of a Series of Medieval Skulls From Northern Sweden: By Lennart Lysell and Rune Filipsson. Odontol. Tidskr. **66**: 161-174, 1958.

With the help of profile roentgenograms, a study was made of the jaw and facial skeleton of sixty-five medieval crania from northern Swedish material.

The investigation does not support the view that in attrition the lower jaw is shifted into a more anterior position, with a resulting decrease in overjet. It is not possible to establish any significant forward displacement of the lower apical base-point (B) or of the mental prominence (Pg), that is, an increase in angles S — N — B and S — N — Pg, respectively. On the other hand, it is regarded as probable that the decrease in overjet that can be observed in a comparison between old and young persons in cranial material is due to inward and backward displacement of the crowns of the upper incisors (a decrease in the angle between the upper incisor and S — N).

It is pointed out that attrition could be expected to produce a reduction in facial height (N — Gn). A possible explanation of the fact that this does not seem to be the case is that, under the influence of severe attrition, the teeth "continue to erupt," that is, bone apposition takes place at the alveolar fundus, at an even rate to that of attrition. An additional factor contributes to the failure of the decrease in the height of the dental crowns is reflected in a reduction in facial height, namely, the former can decrease without an equally large change in the height of the bite. As far as the incisors are concerned, this is possible through a decrease in overbite. In the molar region, in which the cusps of a tooth in one jaw bite into the fossae of the corresponding tooth in the other jaw, the effect can be less than the total decrease in height of the upper and lower teeth. It is also possible that random differences in the composition of the groups is responsible for the coincidence between them with respect to facial height.

Changes in Adult Face Height Due to Ageing, Wear and Loss of Teeth and Prosthetic Treatment. A Roentgen Cephalometric Study Mainly on Finnish Women: By Antje Tallgren. Acta odont. scandinav., vol. 15, Supp. 24, 1957.

There is a continuous increase of both the morphologic face height and the rest face height during the adult period, the interocclusal clearance remaining, on the average, constant during this synchronous development.

The abrasion of the dentition appeared to cause a marked reduction of the morphologic face height and a smaller reduction of the rest face height, resulting in an increase of the interocclusal clearance.

The most important conclusion arising from this study is that the face height seems to adapt itself to changes in the morphologic face height. This prompts the question of the significance of the interocclusal clearance—it appears to be a space between the jaws conditioned by the functional requirements of the masticatory apparatus.

Statistics—Lighthouse or Lorelei? By Raymond C. Thurow. Angle Orthodontist **28**: 61-78, April, 1958.

The statistical result is nothing more than an innocent little figure which tells in all honesty what happens when the originally selected sample is measured in the manner in which the data were collected and subjected to the mathematical procedures used. If it is read and evaluated in this light, with all the assumptions made along the way thrown in, it will present a true picture.

This paper is an attempt to point out some of the hazards with which we must contend in applying statistics to orthodontics. To illustrate typical situations, several examples of statistical fallacies have been selected from the literature for discussion.

News and Notes

Fifty-fifth Annual Session of the American Association of Orthodontists, May 3-7, 1959, Detroit, Michigan

The Statler-Hilton Hotel was reserved for the Detroit session within a few days after the selection of Detroit at the Boston session in 1956. At that time we felt that we were fortunate to have fifty more guest rooms than we had in Boston.

Even that number of rooms, regarded so triumphantly by us, appeared to be inadequate when we observed the huge attendance at Dr. Broussard's meeting in New Orleans in 1957. A frantic telephone call to Detroit gained us another 100 rooms in the Tuller Hotel, just across the street from the Statler-Hilton. We did not mind this division with another hotel, because of the latter's dignity, luxury, and convenience. It appeared as if we were all set for Detroit in 1959.

Then at Dr. Squires's session in New York in 1958, a further frustration was experienced as we noted that, according to that session's attendance, we were still short of rooms for Detroit if we had an equal attendance. So, from New York we telephoned for and gained an additional 175 rooms in the Tuller Hotel, giving us a total of 875 rooms which would accommodate more than 1,700 persons.

We continued to feel secure, since the two hotels were about a one-minute walk from each other. What a terrific shock it was to us when the news came over the radio and television that the Tuller Hotel was on fire! This within a few months of our session!

While mainly the lobby of the hotel was affected, the guest rooms were all right and were reoccupied within twenty-four hours. It appeared to us that we could still retain the hotel, provided that the effects of the fire were repaired. However, in the back of our minds was the fear that many of our guests would be "gun shy" of a hotel in which there had been a recent fire.

Around the middle of February we noted that no progress had been made in repairing the damage to the Tuller Hotel, so we transferred our overflow to the Detroit-Leland Hotel, which is three short blocks from the Statler-Hilton and will meet the requirements of our members admirably.

The Detroit-Leland has been most gracious and understanding of our problems and has set aside 250 rooms for us. Only a very few large hotels in downtown Detroit would come up to our standards, and we feel that we were most fortunate in finding the Detroit-Leland in between conventions and willing to reserve a large block of rooms for us on such extremely short notice.

All that has been said to this point is in an effort to solicit your tolerance of the unusual circumstances contributing to this division of hotel accommodations. Approximately 500 of our guests will be at the Detroit-Leland Hotel. If you ask me, that is a group large enough to foster sufficient mischief!

C. Edward Martinek, President.

Summary of Schedule

Sunday, May 3

10 A.M.-7:30 P.M.	Registration, Grand Ballroom Foyer.
10 A.M.-5 P.M.	Board of Directors Meeting, Ivory Room.

12:15 P.M.	Board of Directors Luncheon, Parlor E.
2 P.M.	Research and Kellogg Foundation, Parlor F.
2 P.M.-9 P.M.	A.B.O. Exhibit of Case Reports, Bagley Room.
5:30 P.M.-7:30 P.M.	Champagne Reunion, Grand Ballroom.

Monday, May 4

8 A.M.-5 P.M.	Registration, Grand Ballroom Foyer.
8 A.M.	Publications Committee Breakfast, Parlor E.
8 A.M.	Breakfast, Southern Society, Parlor C.
8:30 A.M.-10:30 A.M.	Ladies Continental Breakfast, Michigan Room.
8:30 A.M.-5:30 P.M.	Commercial Exhibits, Wayne Room.
9 A.M.-9 P.M.	A.B.O. Case Reports Exhibit, Bagley Room.
9 A.M.	Official Opening of Session, Grand Ballroom.
10 A.M.	Paper by Wendell L. Wylie, Grand Ballroom.
11 A.M.	A.B.O. Thesis by Robert E. Moyers, Grand Ballroom.
12:15 P.M.	Golden Anniversary Luncheon, Grand Ballroom.
12:30 P.M.	Ladies' Luncheon, Sheraton-Cadillac Hotel.
2:30 P.M.	Ketcham Award Presentation, Grand Ballroom.
3:15 P.M.	Paper by Alton W. Moore, Grand Ballroom.
4:15 P.M.	Milo Hellman Research Award, Grand Ballroom.

Tuesday, May 5

8 A.M.-5 P.M.	Registration, Grand Ballroom Foyer.
8 A.M.	Board of Directors Breakfast, Parlor E.
8 A.M.	A.A.O. Admissions Committee Breakfast, Parlor C.
8:30 A.M.-5:30 P.M.	Commercial Exhibits, Wayne Room.
8:30 A.M.-10:30 A.M.	Ladies Continental Breakfast, Michigan Room.
9 A.M.-9 P.M.	A.B.O. Case Reports Exhibit, Bagley Room.
9 A.M.	Paper by Joseph R. Jarabak, Grand Ballroom.
10 A.M.	Paper by William L. Wilson, Grand Ballroom.
11 A.M.	First Business Meeting, Grand Ballroom.
12:45 P.M.	Mixed Luncheon, Grand Ballroom.
2 P.M.	Tours
2 P.M.-5 P.M.	Research Section, Michigan Room.

Wednesday, May 6

8 A.M.-5 P.M.	Registration, Grand Ballroom Foyer.
8 A.M.	Breakfast for Constituent Secretaries, Parlor E.
8 A.M.	Breakfast, 1960 Executive Committee, Parlor C.
8:30 A.M.-5:30 P.M.	Commercial Exhibits, Wayne Room.
9 A.M.-5 P.M.	A.B.O. Case Reports Exhibit, Bagley Room.
9 A.M.-12 M.	Table Clinics, Grand Ballroom, Michigan Room, English Room, and Ivory Room.
12:15 P.M.	Past Presidents' Luncheon, Parlor C.
12:15 P.M.	Luncheon, Canadian Orthodontic Section, Parlor F.
2 P.M.-5 P.M.	Limited Attendance Clinics, 13th and 14th Floors.
6:30 P.M.-7:30 P.M.	President's Reception and Cocktails, Oak Foyer, Michigan Room, and English Room.
7:30 P.M.	Banquet and Dance, Grand Ballroom and Ivory Room.

Thursday, May 7

8 A.M.	Breakfast, 1960 Organizational Meeting, Parlor F.
8:30 A.M.-1 P.M.	Commercial Exhibits, Wayne Room.

9 A.M.	Paper by T. M. Graber, Grand Ballroom.
10 A.M.	Paper by Harold Hillenbrand, Grand Ballroom.
11 A.M.	Final Business Meeting, Grand Ballroom.
12:30 P.M.	Adjournment.

Committees

Golden Anniversary Luncheon

Charles R. Baker, Chairman
636 Church St.
Evanston, Illinois
Oliver W. White
William E. Flesher

Program

Scott T. Holmes, Chairman
1205 Peck St.
Muskegon, Michigan

Carl R. Anderson, Co-Chairman
Loraine Bldg.
Grand Rapids, Michigan

Vernon Fisk
M. Duke Edwards
Paul Monitz
Donald MacEwan
Edward Cheney
T. M. Graber
Paul V. Reid
J. William Adams (ex officio, Research)

Limited Attendance and Table Clinics

Edward A. Cheney, Chairman

Rodney Mathews
Dallas McCauley
William L. Casey
H. Carlyle Pollock, Jr.

W. M. Jacobsen
Jerome S. Cullen
M. J. Maxian
Waldo Urban

Charles H. Smith

Local Arrangements Committee

Oliver W. White, Honorary Chairman

Robert E. Coleman, Chairman

Ira A. Lehman, Co-Chairman

Frank S. Cartwright, Treasurer

Barnett Malbin
James H. Teetzel
J. Hilliard Hicks

Marvin Davis
George S. Harris
C. Roy Brooks

Commercial Exhibits

Barnett Malbin, Chairman

Milton Superstine
Bruce D. Foster
Robert L. Vedder

Properties

Marvin Davis, Chairman

Donald B. Shumaker
Donald D. Bergeron
Milton M. Lappin
Bruce D. Foster

James D. Happle
Lewis Gach
Samuel Glossman
Bernard W. Lyon

Leon Diskin

Registration

James Teetzel, Chairman
Earl E. Shepard, Co-Chairman

David L. Hall
Ira A. Lehman
Lewis Gach
Joseph O. Grant
Donald D. Bergeron
Bernard W. Lyon
Leon A. Montague

Banquet and Entertainment

George S. Harris, Chairman

William J. Clauss
Robert E. Ross
William A. Heisel, Jr.
Douglas J. Jamieson
C. Roy Brooks
Floyd Arnold

Press

George S. Harris, Chairman

J. A. Salzmann
Frederick R. Aldrich
Chas. H. Tweed
Allan G. Brodie, Sr.
Harold Noyes
T. M. Graber
H. C. Pollock, Sr.
William R. Alstadt
Herbert K. Cooper
Robert H. W. Strang
George M. Anderson
G. Vernon Fisk

Tours

(You will be able to arrange for these when you arrive)
Joseph F. Maher, Chairman

Robert K. Devine
William H. Krieg
Daniel H. Gilbert
A. J. Rondon

Ladies' Entertainment

C. Roy Brooks, Chairman
Mrs. C. Roy Brooks, Co-Chairman

Executive Committee

Mrs. C. Edward Martinek
Mrs. Robert E. Coleman
Mrs. George S. Harris
Mrs. J. Hilliard Hicks

Mrs. Robert G. Aldrich
Mrs. Carl R. Anderson
Mrs. George M. Anderson
Mrs. Ernest N. Bach
Mrs. Richard C. Beatty
Mrs. Donald Bergeron
Mrs. Frank P. Bowyer
Mrs. Frank S. Cartwright
Mrs. Edward A. Cheney
Mrs. Wm. J. Clauss
Mrs. Arthur H. Craven
Mrs. Marvin Davis
Mrs. B. F. Dewel
Mrs. Bruce D. Foster
Mrs. Lewis Gach
Mrs. Samuel Glossman
Mrs. Joseph O. Grant
Mrs. John A. Henkel
Mrs. L. B. Higley
Mrs. Scott T. Holmes
Mrs. Stephen C. Hopkins, Sr.
Mrs. Wm. R. Humphrey
Mrs. Douglas J. Jamieson
Mrs. Milton Lappin
Mrs. Bernard W. Lyon
Mrs. Joseph F. Maher
Mrs. Barnett M. Malbin
Mrs. D. C. Miller
Mrs. Leon A. Montague
Mrs. Robert E. Moyers
Mrs. Marcus D. Murphey
Mrs. Harvey H. Payne

Mrs. Paul V. Ponitz
Mrs. Wilbur J. Prezzano
Mrs. Richard M. Railsback
Mrs. Paul V. Reid
Mrs. J. A. Salzmann
Mrs. Earl E. Shepard
Mrs. Donald B. Shumaker
Mrs. John R. Thompson
Mrs. O. W. White
Mrs. Howard L. Wilson
Mrs. Wendell L. Wylie

Hospitality and Information

J. Hilliard Hicks, Chairman

Robert E. Moyers
Gerald V. Barrow
Robert J. Ponitz
Allen A. Collins
Pauline L. Spring
Charles K. Sawyer
John A. Henkel
Harry L. Hosmer
John Eagan
Robert D. Aldrich
David W. James
Fred L. Tucker
Leonard Sidlow
Stanley MacKenzie
Woodrow C. Anderson
W. Patterson Kinder
Hunter I. Miller
Breyton D. Jones

Great Lakes Society of Orthodontists

The thirtieth annual meeting of the Great Lakes Society of Orthodontists will be held at the Carter Hotel, Cleveland, Ohio, Nov. 29 and 30, and Dec. 1 and 2, 1959.

Pacific Coast Society of Orthodontists*

EDITORIAL

The report of the Membership Committee, entitled "Your Membership Committee," written by the Chairman, Dr. George W. Hahn, tells a long story in a few words.

The Committee has a hard task, for it must carefully examine the requests of the members that wish to qualify as senior associates of preceptors. This must be done impartially and with the one thought in mind to be certain the trainee or junior associate, at the end of the training period, will have the knowledge and the skill to practice orthodontics on his own and will qualify to become a member of the Pacific Coast Society of Orthodontists. It is a difficult task, for the background of both the senior and junior associates must be carefully scrutinized to be certain that each can carry out his part of the relationship. We must be certain that the senior associate has kept abreast of modern orthodontic thinking and procedure.

We are not all teachers; many men are fine orthodontists and are sincere in everything they do but lack experience in the teaching field. These men are our friends and colleagues, and it becomes a serious problem when the members of the Committee have to turn down their requests.

The task is not an easy one for the senior associate either; the personal experiences of several of our members that have been granted the request to train a junior associate are interesting. One stated that he had to cut his practice about 25 per cent to spend the time that is necessary to teach the trainee. Another discovered that he is now filling the shoes of about eight teachers that make up the faculty for a course of 1,500 hours. The immediate problem is that he has to read the texts and other literature that make up the study list and that alone, with a large practice, is hard work.

The loyalty and sincere cooperation of the members of the Pacific Coast Society of Orthodontists are appreciated by the Membership Committee, and the Committee will continue in *its* endeavors to train competent orthodontists.

William S. Smith.

*Excerpts from the *Bulletin* of the Pacific Coast Society of Orthodontists, February, 1959.

YOUR MEMBERSHIP COMMITTEE

The following report is taken in large measure from the minutes of the meeting of the Membership Committee, held in San Francisco, Saturday, Jan. 17, 1959.

Because of the difficulties encountered in attempting to process applications for senior and junior associates by mail, the following plan has been adopted by the Committee. Applications for senior and junior associates will be processed at a meeting of the Committee twice a year. These meetings will approximate February 15 and September 30. Applications may be filed with the chairman at any time, but the deadline for those to be acted upon at the February meeting will be January 1 and for the September meeting, August 15.

The Committee wishes to point out that the forming of an association of preceptor and student is one that should not be entered into lightly. The senior associate assumes a serious obligation when he contracts to train a young man over a period of three years and prepare him for membership in the American Association of Orthodontists. In considering an application for senior associate your Committee judges the applicant on his proficiency and competence as a teacher and counselor rather than on his ability as a clinical orthodontist. In no event should the association be established until the applications of both senior and junior associate have been processed by the Committee and notice of the result received by the applicants.

Junior associates should be advised that completion of three years' association does not guarantee membership in the Society. Like 1,500 hours of orthodontic training in a university or college, it merely makes a man eligible. Election to membership is the prerogative of the Board of Directors of the Pacific Coast Society of Orthodontists.

Junior associates will be required to present themselves for examination at the end of the first, second, and third years. Examinations will be conducted twice yearly, about the middle of February and the end of September. The subjects for each examination are presently being prepared and will be sent to those who have been accepted as senior and junior associates in the near future. A thesis comparable to that expected from a candidate for a Master of Arts degree will be required previous to the final examination.

Of the thirteen applications reviewed to date, seven were accepted, two were rejected, and four were withdrawn.

Respectfully submitted,

Harvey M. Spears
M. R. Chipman
Herbert V. Muchnic
Emery J. Fraser
William S. Smith
George W. Hahn, Chairman.

NORTHERN COMPONENT

On Sunday evening, Nov. 23, 1958, members of the Northern Component, their wives, and guests attended a cocktail party at the Hotel Vancouver, Vancouver, B. C.

On the following morning, November 24, in Salon C of the Hotel Vancouver, the meeting was called to order by Chairman Kenneth Kahn. Dr. Bertram Kraus, Professor of Physical Anthropology at the University of Washington, was introduced as our first guest speaker. His subject was "Facial Heredity." Using an analysis of identical triplet children from the Seattle area, Dr. Kraus demonstrated, cephalometrically, the importance of environmental factors as well as hereditary factors during growth and development as influencing the positions of the teeth.

The program continued with a presentation by Dr. Hallam Gresham of the Department of Orthodontics at the University of Otago, New Zealand. His paper was entitled "Removable Appliance Therapy." In addition, he gave an enlightening description of the practice of general dentistry in New Zealand.

During the afternoon, Dr. Carl Cramer, assistant Professor of Physiology at the University of British Columbia Medical School, discussed "Some Aspects of Bone Physiology Relating to Orthodontic Tooth Movement."

SOUTHERN COMPONENT

Chairman Burton Fletcher called the meeting [Dec. 12, 1958] to order at 10 A.M. by introducing the Chairman of the Day, Fay C. Van, who called upon Harry Tepper for the presentation of a Class II, Division 2 case report.

Harry made a very fine presentation with color slides, headplates, photographs of casts, case history reports, etc. The case was treated with the Crozat appliance, which is routinely used in Harry's office. This was followed by the case report of a Class II, Division 1 by Fay Van, who demonstrated the use of the cephalometric x-rays and the edgewise appliance with complete and excellent records presented.

The presentation of single cases was very well received, because it permitted the participants to make a full and accurate presentation of their analysis and treatment.

A short business session followed, during which time the following applicants were acted upon favorably by the membership: For active membership—Jess A. Conant, Jr., Raymond L. Cullen, Len C. Fairbanks, Edward A. Kemler, J. William Murphy, Fred I. Kobayashi, Milo M. Stucky, and Abraham Swerdlow; for associate membership—Philip Bader, Donald P. Erb, Marshall Kenneth Ludwig, and Leo P. Rosso.

CENTRAL COMPONENT

The final quarterly meeting of the Central Component was held on Tuesday, Dec. 9, 1958, at the Fraternity Club, San Francisco.

The minutes of the previous meeting were approved as published in the *Bulletin.*

Program Chairman, Walter Straub, introduced the clinicians for the afternoon session. The first discussion, "The Universal Appliance as It Is Used Today," was presented by Drs. Ray Curtner, John Ray, Richard Muir, Warren Kitchen, and Rodney Johnson. The material, presented largely by table clinics, covered the various applications of this appliance in orthodontic problems. Following this, Dr. Clu Carey read a paper, "The Four Fundamental Treatment Forms With Resilient Laminated Arch Mechanics." This paper discussed his latest treatment procedures with laminated arch and edgewise bracket technique.

Following the cocktail hour, Chairman Bill Parker called the business meeting to order. After thanking the program chairman and essayists for their fine program, he asked for a report of the Membership Committee.

Dr. Norman Snyder reported applications for associate membership from Dr. Don Bale, Dr. W. James Dawson, Dr. Richard L. Ellis, Dr. Burton J. Greenberg, Dr. Philip W. Leigh, and Dr. Donald R. Poulton. These men were elected to associate membership. He further reported the application of Dr. Preben Jurvig for regular membership. It was voted that he be recommended to the Board of Directors for regular membership.

Dr. Richard Railsback reported that the next annual meeting of the P.C.S.O. would be held at Richey's Studio Inn, Palo Alto, Feb. 21 to 24, 1960. He announced that Eugene E. West would be chairman and that other committee appointments would be made soon.

Dr. Murray Ballard reported that the Nominating Committee proposed the following for our new officers: *Chairman,* Walter J. Straub; *Program Chairman,* John H. Parker; *Secretary-Treasurer,* Peter J. Ceremello; *Director to P.C.S.O.,* Wendell L. Wylie; *Alternate Director,* Eugene E. West. A unanimous ballot was cast in favor of these men.

As a matter of information, Dr. Warren Kitchen reported that he has been approached by an insurance agent as to the possibility of instituting a group life insurance policy for our organization. He reported that this would be further discussed by the Board of Directors.

Chairman Bill Parker, in his concluding remarks before retiring, thanked all for their cooperation and enthusiasm during his term of office.

Our annual Santa Claus (Bill Smith), before distributing gifts, paid a special tribute to Dr. Richard Railsback, President of the P.S.C.O. He pointed out his many attributes and accomplishments as an orthodontist, a teacher, an individual interested in dental and orthodontic organizations, and a sportsman. This was enthusiastically seconded by the entire group.

Dr. Parker introduced our new chairman, Walter Straub, and the meeting was adjourned.

Eugene E. West, Secretary-Treasurer.

HAWAII COMPONENT

The Hawaii Society of Orthodontists was formed on April 3, 1957, with seven members of the A.A.O. present, the requirements for membership being limited to members in good standing with the A.A.O. The members present were Drs. R. C. Sample, M. Wakatake, A. Chun Hoon, S. Kaneko, S. Glynn, O. Choy, and G. Uesato. Dr. Sam Glynn was elected President and Arthur Chun Hoon, Secretary-Treasurer.

Two new members were added in September, 1958, namely, Drs. S. Kagawa and G. Masunaga. Dr. Arthur Chun Hoon served as President and Minoru Wakatake as Secretary-Treasurer during the year 1958.

The present officers are: Dr. Robert Sample, *President*, and Sadao Kaneko, *Secretary-Treasurer*.

Programs for the Society have been limited to presentations by members during our quarterly meetings, although during one of our frequent special meetings, we have been fortunate in having as guest Dr. Robert Murray, who presented the subject "Clinical Orthodontics," and Dr. Wendell Wylie, who gave a one-week course on "Cephalometric X-ray." Also, Dr. Kesling of La Porte, Indiana, was a speaker during one of our meetings.

Tentative programs in the future include "Tweed's Philosophies and Techniques" by Dr. B. L. Herzberg of Chicago, Illinois, who plans to visit the Islands in February; as special guest we plan to have Dr. Steiner present his course in early April.

Sadao Kaneko, Secretary.

The American Institute of Dental Medicine Changes Its Name

The growing demand for and the great emphasis in the teaching areas on the basic sciences led to the establishment in 1954 of a Division of Oral Biology at the University of California; this Division includes the Sections of Oral Histology, Oral Pathology, Oral Medicine, and Oral Diagnosis. From the increasing demand for postgraduate education in the borderline fields of dentistry, medicine, and the health sciences, it appears that the name of the American Institute of Dental Medicine is not all-inclusive. At a recent meeting of the Board of Directors, the name was therefore changed to the American Institute of Oral Biology. It will be known as such as of July 1, 1959.

William R. Alstadt Honored

Dr. William R. Alstadt of Little Rock, Arkansas, past-president of the American Dental Association and long-time specialist in the practice of orthodontics, was awarded the Alumni Citation of the School of Dentistry of Washington University, St. Louis, Missouri, on Founders Day, Feb. 22, 1959.

The citation states that "because of his outstanding career in the practice of orthodontics, which led, among many other honors, to his election and service as the president of the American Dental Association, because of his constant efforts in the fields of dental

education and legislation, including clinics and lectures in 39 different states, and because of his continued unselfish devotion to civic affairs, this citation is awarded to William Robert Alstadt"

Dr. Alstadt has served as a trustee of the American Dental Asosciation for some years.

Dr. Graber Lecturing in South America

Dr. T. M. Graber, recently appointed to the staff of Children's Memorial Hospital in the capacity of Associate Attending Orthodontist, will give lectures and postgraduate courses in Peru, Brazil, and Venezuela during February and March of this year.

The courses will deal with case analysis and diagnosis and extraoral force.

American Dental Association

Appointment of Mr. William Allan Logan as director of the Bureau of Public Information of the American Dental Association has been announced by Dr. Harold Hillenbrand, of Chicago, Association secretary.

In his new position, Mr. Logan heads the public relations program of the Association. He was for two years an executive of the Missouri State Medical Association in St. Louis, where he handled public relations, represented the organization in programs with allied professional organizations and health groups, acted as legislative representative, and served as staff editor of the Missouri group's journal.

Prior to joining the staff of the medical association, he was for five years a member of the editorial staff of the Kansas City *Star,* where he served as a state political reporter and covered legislative developments in the health fields.

Mr. Logan holds a bachelor's degree in economics from the University of Kansas City, where he also did graduate work toward a master's degree in the same field.

He is a veteran of World War II, having served in the Pacific Theater with the Army. He also attended the Army Air Corps statistical school at the Harvard School of Business Administration and did Army intelligence work. He entered the Air Corps reserve with the rank of captain in 1946.

Pension Program for Self-Employed Approved by House Committee*

The Ways and Means Committee of the House of Representatives has reported favorably on the Keogh-Simpson Bill that would permit dentists and other self-employed individuals to set up their own retirement programs. Some twenty congressmen have introduced varying versions of the same bill which would permit self-employed persons a tax deferment on a limited portion of their income set aside for their retirement. On February 23, the American Thrift Assembly, which was formed to encourage the establishment of voluntary pension plans by self-employed, held its first 1959 meeting in Chicago with Dr. Floyd Pillars of Des Moines, Iowa, vice-chairman of the A.D.A. Council on Legislation, representing the Association. In other action in the legislative area, two representatives of the Association are presenting testimony at hearings on the proposed new International Institute for Health Research on March 4 before the Senate Labor and Public Welfare Committee. Dr. Matthew Besdine, of Brooklyn, New York, member of the Council on Legislation, and Dr. George C. Paffenbarger, of Washington, D. C., director of the A.D.A. research program at the National Bureau of Standards, are testifying on the legislation. The Association's House of Delegates approved the proposal in principle last November.

*From the *A.D.A. News Letter,* March 2, 1959.

First Annual Margolis Honorary Lecture and Meeting

The first annual Margolis Honorary Lecture and Meeting, sponsored by the alumni of Tufts University School of Dental Medicine, will be held on June 12, 13, and 14 at the Hotel Statler-Hilton in Boston, Massachusetts.

The subject of the meeting ("Clinical Orthodontics") will have as its theme "Current Concepts Based Upon Past Experience and a 'Look' Into the Future."

Participants will include Drs. Clifford Ballard, Allan G. Brodie, Carlos Coro, Herbert I. Margolis, Charles H. Tweed, Wendell L. Wylie, and other prominent orthodontists.

There will be a program planned for the entertainment of the ladies.

Further details will be forthcoming in a later publication, and all pertinent information will be mailed to members of the American Association of Orthodontists.

Death of Lloyd S. Lourie, Sr.

We regret to announce that Lloyd S. Lourie, Sr., died in Peoria, Illinois, on March 12, 1959, at the age of 82 years. Dr. Lourie was one of the first to specialize in orthodontics in the city of Chicago.

Notes of Interest

W. Mahlon Adams announces the removal of his office to 14434 Hamlin St., Van Nuys, California, practice limited to orthodontics.

James F. Bardgett, D.D.S., M.S., announces the opening of his office in the Beaumont Building, Suite 240, 3720 Washington Blvd., St. Louis, Missouri, practice limited to orthodontics.

John R. Clark, D.M.D., announces the association of Adrian P. Hulsebosch, D.D.S., with him in the practice of orthodontics, 351 College Ave., Elmira, New York.

Paul L. Cleaves, D.M.D., announces the removal of his offices to 96 Williams St., Longmeadow, Massachusetts, practice limited to orthodontics.

George T. Gildea, D.M.D., announces the removal of his office to 1058 North Main St., Brockton, Massachusetts, practice limited to orthodontics.

James S. Gold, D.D.S., announces the association in his practice of Donald A. Apfel, D.M.D., 635 Roger Williams, Highland Park, Illinois.

Edwin W. Kane, D.D.S., announces the opening of his office for the practice of orthodontics at Odd Fellows Lodge Building, 3rd Ave. and Lincoln Highway, Coatesville, Pennsylvania.

Forthcoming meetings of the American Association of Orthodontists:
1959—Statler Hotel, Detroit, Michigan, May 4 to 7.
1960—Shoreham Hotel, Washington, D. C., April 24 to 28.
1961—Denver, Colorado.
1962—Los Angeles, California.

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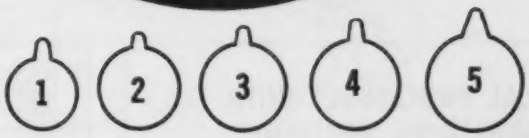

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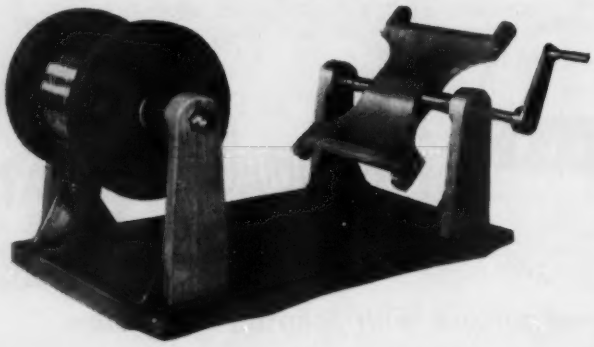

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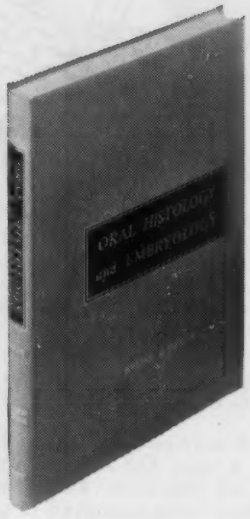

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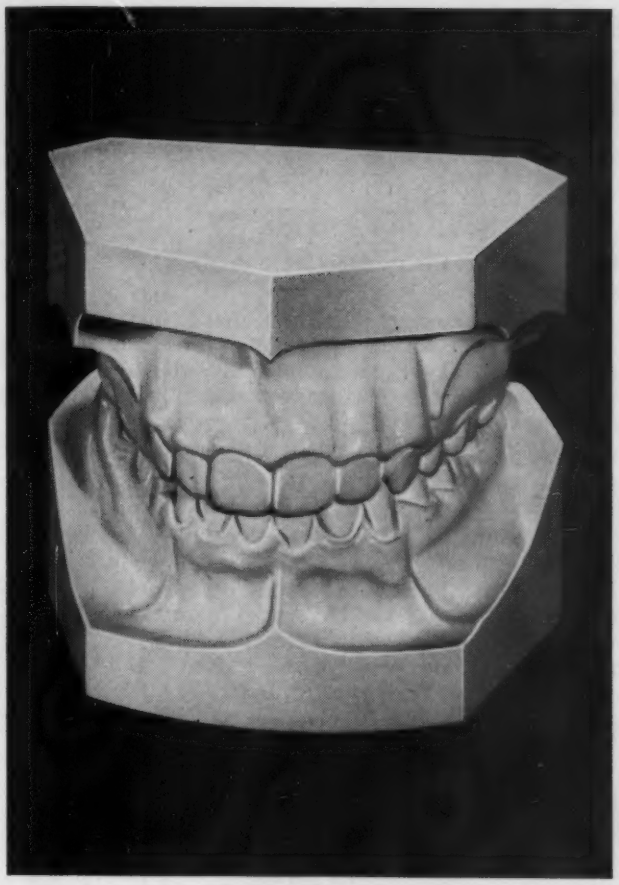

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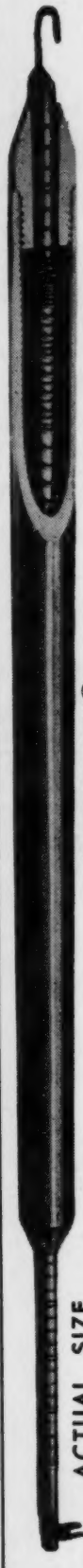

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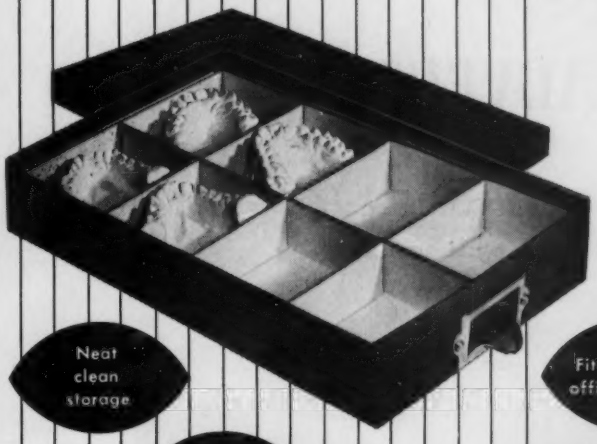

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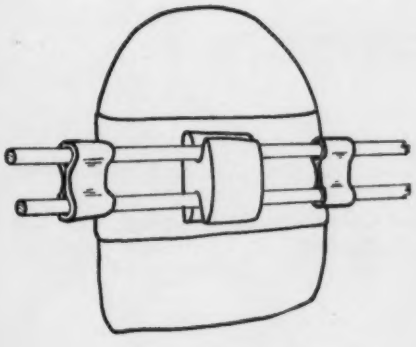

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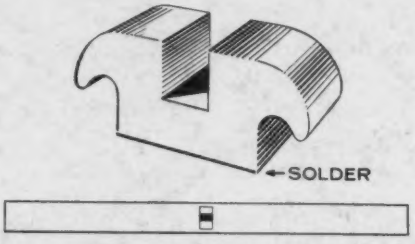

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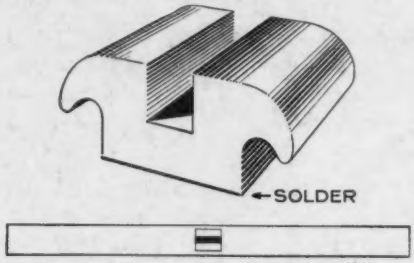

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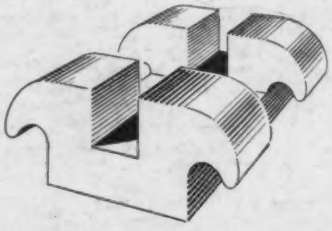

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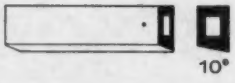
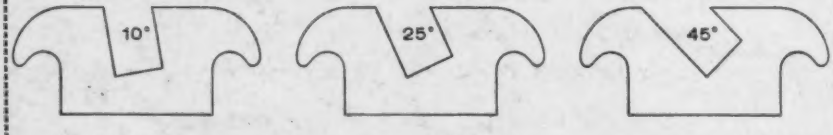
M 474



Metalba* Anchor Tubes for use in connection with Torque Slot Edgewise Brackets. They are ¼ inch long, rectangular tubes, with a bore of .022 x .028. The side of the tube which is to be soldered to the band has a 10 degree angle to permit it to fit into the Torque Slot Bracket assembly.

*METALBA—platinum color, precious metal.

Torque slot, Divided Triple-width Edgewise Brackets



The angle of the wire slot in the Bracket gives direction to the Torque force of arch wire.

M 516	Torque 10°	Width	.140 inches
M 517	Torque 10°	Width	.180 inches
M 518	Torque 25°	Width	.180 inches
M 519	Torque 45°	Width	.180 inches

METALBA
TRADE MARK
S.S.WHITE

THE S. S. WHITE DENTAL MANUFACTURING CO.

PHILADELPHIA 5, PA.